

Timetracker capabilities in student project activities

Capacidades del seguimiento del tiempo en actividades de proyectos estudiantiles

Olga A. Sorokina 

Kumertau branch of Orenburg State University, Kumertau, Russia
ORCID: <https://orcid.org/0000-0002-8623-5809>

Irina N. Odarich 

Togliatti State University, Togliatti, Russia
ORCID: <https://orcid.org/0000-0003-2612-5138>

Olga I. Vaganova 

Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, Russia.
ORCID: <https://orcid.org/0000-0001-8347-484X>

Marina N. Bulaeva 

Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, Russia.
ORCID: <https://orcid.org/0000-0002-9928-9451>

Anna V. Lapshova 

Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, Russia.
ORCID: <https://orcid.org/0000-0001-7017-3589>

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*Correspondence

Email: ivannovadremova29@gmail.com

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Summary

The purpose of the work is to consider the possibilities of time trackers in the design activities of students. The article presents an analysis of modern time trackers that contribute to the self-organization of students to achieve educational goals. In the context of an increase in the share of independent training in universities and the expansion of distance learning, there is a need for students to master time management, which allows them to conduct activities most productively. Time management involves the use of electronic tools that promote the development of the discipline, self-organization and student planning for the rapid achievement of goals. The article discusses both trackers for large-scale professional activities, control and accounting of working hours, as well as simpler versions of trackers suitable for personal use by students. Time management ensures timely implementation of the project, allows you to evaluate the contribution of each student to the work, and adjust the activities of students. The use of time trackers in performing various tasks, including the implementation of projects, contributes to high-quality visualization of the number of hours spent on the task and, as a result, the development of discipline and self-organization of students.

Keywords: time management, time tracker, self-organization, planning, application.

Resumen

El propósito del trabajo es considerar las posibilidades de los rastreadores de tiempo en las actividades de diseño de los estudiantes. El artículo presenta un análisis de los rastreadores del tiempo modernos que contribuyen a la autoorganización de los estudiantes para alcanzar las metas educativas. En el contexto de un aumento en la proporción de formación independiente en las universidades y la expansión de la educación a distancia, existe la necesidad de que los estudiantes dominen la gestión del tiempo, lo que les permite realizar actividades de la manera más productiva. La gestión del tiempo implica el uso de herramientas electrónicas que promueven el desarrollo de la disciplina, la autoorganización y la planificación estudiantil para el rápido logro de metas. El artículo analiza tanto los rastreadores para actividades profesionales a gran escala, el control y la contabilidad de las horas de trabajo, como las versiones más simples de rastreadores adecuados para el uso personal de los estudiantes. La administración del tiempo asegura la implementación oportuna del proyecto, le permite evaluar la contribución de cada estudiante al trabajo y ajustar las actividades de los estudiantes. El uso de rastreadores de tiempo en la realización de diversas tareas, incluida la implementación de proyectos, contribuye a una visualización de alta calidad del número de horas dedicadas a la tarea y, como resultado, al desarrollo de la disciplina y la autoorganización de los estudiantes.

Palabras clave: gestión del tiempo, rastreador de tiempo, autoorganización, planificación, aplicación.

Introducción

The most important task of professional educational institutions is to prepare a competent student who is capable of productive independent creative activity (Myalkina, 2019). In the context of an increase in the share of independent training in universities and the expansion of distance learning, there is a need for students to master time management, which allows them to conduct activities most productively (Oros, 2018). Time management involves the use of electronic tools that promote the development of the discipline, self-organization and student planning for the rapid achievement of goals (Osadchenko, 2019). The article presents time trackers as tools to increase self-organization (Pichugina & Bondarchuk, 2019a). Time tracker is a modern solution that allows you to expand the training opportunities of students of higher educational institutions (Pichugina & Zhilyakova, 2019). They can be used by both students and teachers (Pliushch, 2018).

Time management involves the most effective organization for managing your time to achieve your goals (Chertovskikh, 2019). Time trackers are an integral part of modern time management.

Material and methods

The study involved students of a higher educational institution in the amount of 56 people. Students were asked to complete the project using the capabilities of time trackers. The results of the projects before the introduction of time trackers and after the introduction of time trackers were compared. The rating was set by the developed criteria (Arbelález-Campillo, & Rojas-Bahamon, 2020).

The main goal of comparative analysis was to study the relationships between similarities and differences.

A comparison of the results was carried out using the method of statistical analysis. All numerical control results were brought to a single scale. For this, a database was created in MS Excel. We built frequency grouped distributions of samples and calculated sample numerical characteristics. We used a two-dimensional visual analysis of data using histograms and line graphs (Pinkovetskaia et al, 2020).

Results

Time tracker is a program that allows you to track the activities of the subjects of the educational process during working hours.

In the development process, the following are usually affected:

- interface design;
- landing;
- frontend (Aleksieienko-Lemovska, 2019);
- programming;
- Braintree and invoicing (Sharonin & Kozlova, 2017);
- try application Mac, Windows (Ilyashenko et al., 2019).

Time trackers in the process of self-organization and planning provide the following features:

- control of the expense of own time;
- increase work efficiency (Gladkov et al., 2019);
- control over changes in productivity (Andriushchenko, 2018).

The problems of organizing time management are presented in the works of O.N. Azarova, G.A. Arkhangelsky, S.I. Kalinin and others.

A time tracker for time tracking allows students to:

- create projects with a large number of participants (the teacher can track this process);
- manage any number of projects (Bakharev, 2019);
- track the progress of tasks, time spent and meeting deadlines;
- track the work of each student in a team for each project and each specific task (Cirdan, 2019).

Time tracker allows you to synchronize all data in the cloud (Filchenkova, 2019).

The project management process is carried out using the auxiliary functions of the tracker:

- automatic reminder regarding time tracking (Halatsyn & Feshchuk, 2019);
- rounding off tracker readings for automatic adaptation of time records for projects (Pisarenko, 2019);
- reflection of diagrams with key performance indicators.

Time tracker for projects is a set of tools for time tracking and reporting used by project managers (Grigoriev et al., 2019). The capabilities of such a time tracker form a single system, the work of which is aimed at simplifying the process of project management (Andrienko, 2019). Time tracking ensures timely implementation of the project, allows you to evaluate the contribution of each student to the work, and adjust the activity of a student (Koshechko, 2018).

Many researchers carry out a comparative characteristic of various trackers (Chirva & Chirva, 2018). Table 1 shows the comparative characteristics of the Time Doctor time tracker and Tracking Time project and task tracking service.

Table 1.

Comparative Characterization of Time Doctor and TrackingTime.

	Time Doctor	Trackingtime
Organization of collaboration		
Notifications	+	+
Search and filters	+	+
Comments	+	-
Collaboration System Capabilities		
Work with email	+	-
Dashboard	+	+
Resource management	+	-
Document management	+	-
Time management	+	+
schedule	+	+
Task list	+	+
Reports	+	+
Time tracking		
Data on visited sites	+	-
Reports and analytics	+	+
Time stamps	+	+
Data on running programs	+	-
Maximum number of users	No limits	No limits
Ability to create screenshots	+	-
Project management		
schedule	+	+
Estimation and cost accounting	+	+

Track Project Development	+	+
Change progress	+	-
Data Security and Privacy		
Personal data	Not going to	-
HTTPS Access	+	+
Availability of backup in several places	+	-
Common features		
Platforms	Web app, Android, the app the IOS, the app the Windows, the application the Mac, the application Linux	Web app, Android, the app the IOS, the app the Windows, the application the Mac, the application Linux
Deployment	Cloud, server, personal computer	Cloud
Languages	Russian, English	English

According to the table, it can be seen that the tracker has more features than the time tracking service. In addition, the service is presented only in English, which to some extent complicates the work with it.

Tracker settings allow you to determine the General details of the app's operation, and it is also possible to switch between active profiles without opening Windows (Kamenez et al., 2019).

Apps allow you to distribute apps by category (apps are automatically added to the list while running) (Andrienko, 2019a).

The statistics function allows you to select information for the specified date from the database and draw a graph or table (Klinkov, 2019).

Among the modern time trackers used as planning and self-organization tools, it is worth highlighting:

- RescueTime;
- Time Doctor;
- Pomodoro Timer Lite;
- TickTick;
- TrackingTime;
- Hours;
- Toggl.

RescueTime-cross-platform time and productivity tracking (Vaskovskaya et al., 2018). It tracks the time spent on applications, websites, and specific documents (Denisova et al., 2019). Its use allows you to get detailed reports on what is taking the time allotted for work and increase productivity (Boyko et al., 2019). This tracker has the function of setting a limit for certain sites and apps, and blocks distracting sites (Smirnova et al., 2019). For example, you can set the following parameters to save time. Place social networks under the Social Networking category and the General subcategory. In this case, the tracker will consider being in social networks as a waste of time (Pinkovetskaia et al, 2020). However, if you include them in the Social Networking category and the Professional Networking subcategory, the tracker will consider them as a tool for working. This app is suitable for tracking students' time to complete a single project.

Time Doctor is a time management program that focuses on productivity and managing daily tasks. The tool is more suitable for professionals. It tracks not only the work, but also the time spent on third-party sites.

Tracker performs the following functions:

- working time control (timer);
- tools to prevent distractions;
- monitoring websites and apps;
- integrates with Bitrix 24, Asana, Basecamp, Google Docs and others.
- reporting on time spent;
- differentiation of access rights;
- API for the implementation of the joint work with other applications;
- increased safety;
- GPS tracking.

After registering your account, you must install the program for your personal computer. In order to take advantage of the app, you must install the appropriate extension in Chrome.

To get started, click "play". Tracker starts automatic time tracking and behavior monitoring. The application also provides for the control of the webcam.

The data management feature allows you to track data about individual projects. Persistent tasks can be added to the control panel. The "time tracking" function allows you to see working time reports for the current week and for the past month.

Some of the features in the application for the personal computer can send to the web application.

There are apps for Android and iOS. On Android, monitoring is possible immediately after installation.

There is a function for web monitoring and application monitoring, and you can enable or disable the "take a screenshot" function.

Time Doctor has a user-friendly interface, viewing tasks for a day or week, tracking any data and transferring it to reports.

The technique of "tomato" has long been known to the science of "Time management" and is used to solve any problems. Traditional technology has been transferred to an electronic environment and now contributes to more effective learning activities. Pomodoro Timer Lite combines two functions. It can work as a regular timer that counts down the time to complete a task and as a tool for full-fledged planning and analysis of the time spent. Tracker solves the problem:

- ease of getting started;
- improved concentration;
- awareness about the decisions;
- improve and maintain motivation;
- quantitative and qualitative improvement of the task evaluation process;
- improving the quality of the educational process.

TickTick allows you to create multiple task lists. Thanks to the Chrome extension, this app is considered one of the most popular for tracking and managing time. For better project management, it can integrate with Basecamp. Another feature of this software is the ability to

install it on Apple Watch. Students can, for example, create educational tasks, project tasks, and notes. A tracker can be used as a three-level system:

- at the first level, lists are considered as a set of projects. Their number is not limited. Archives of issues and lists are stored on TickTick servers. You can edit a project at any time;
- the second level of the task on the list. They can be flexibly sorted by importance, priority, date, or name, and filtered by tags;
- third level-checklists within the task. In the course of training activities, they can be used as two-minute tasks in the GTD ideology (remember and complete at a time).

TrackingTime is a time tracker that is suitable for organizing training activities and working in companies. The core is a simple but powerful task manager that allows you to track working hours in real-time.

Among the trackers that help students organize themselves is Hours, which is compatible with iOS and is available in an online browser. It is characterized by easy synchronization with various gadgets.

Toggl is a cross-platform service. You can install the program on your desktop, download the app for Android or iOS, or use the tracker in your browser. The service allows you to create global categories, such as "education" or "personal tasks". It is also possible to develop a tag system, which will be convenient to track the time worked. You can add other team members to projects that are running. You can track not only your personal performance, but also the performance of other team members. You can also determine the cost of time. This way students are motivated to complete the project on time.

Discussion

Modern time trackers include all the necessary functions to control your own time and allow students to keep a systematic record of it. Most trackers have the function of reminding you to turn it on in order to work and get a weekly timesheet. Working hours can be recorded in both individual and group forms.

We conducted a study that revealed the effectiveness of trackers in the process of students' project activity. Table 2 shows the project implementation criteria.

Table 2.
Project Performance Criteria.

Rating	Criteria
Fine	Compliance with the deadlines, students quickly perform tasks, timely correct deficiencies on the recommendation of a teacher, the actions of the team are coordinated, each of the students performs its function. Students send electronic reports on their activities
Good	Students comply with the deadlines, perform tasks, correct deficiencies on the recommendation of the teacher, the actions of the team are coordinated, each of the students performs its function.
Satisfactorily	Students do not comply with the terms of the project, assignments are completed late, students follow the recommendations of the teacher, but the deadlines are rarely respected, the actions of the team are not coordinated enough, each of the students performs its function.

The "Excellent" rating implies compliance with the requirements of the teacher, compliance with the project deadlines and timely completion of tasks, as well as providing an electronic report on the time spent on the project. Based on the results of project protection, the results shown in figure 1 were obtained.

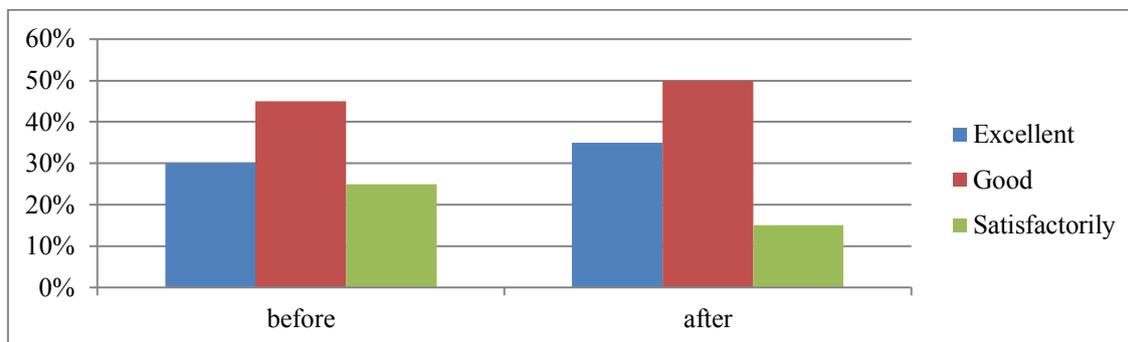


Fig. 1. The Results of Students' Project Activities Before And After The Introduction Of Time Trackers.

We can see that after the introduction of time trackers in the project implementation process, students' scores have become higher. Students have become more organized, their actions are more systematic, and students' activities have become operational. Students keep track of time, which contributes to their self-organization and development of independence. 35% of students who took part in the study after the introduction of time trackers have an "excellent" rating. The percentage of students with a "good" rating also increased to 50%.

Limitations

The results of the presented experiment are limited to a sample of study participants, encompassing students of only university. The study within the limited sample of students does not allow to cover the entire focus group of young people. For further more reliable collection of statistical data, it is necessary to implement a comparative analysis of a more reliable sample.

Conclusion

The possibilities of time trackers in the process of project implementation are quite wide. Time trackers are necessary for managing your own time. Also, trackers allow you to motivate the user to complete tasks. We have considered both simple free trackers that students can install for performing small tasks, and time trackers that are suitable not only for studying, but also for working and performing large-scale projects. Modern time trackers allow you to set a time limit for completing tasks, several types of customizable reports that can be exported to Excel, CVS, or saved in PDF format, can be integrated with various project management software, are linked to electronic calendars, and have mobile versions of applications for Android and iOS.

The study found that after the introduction of time trackers, students' scores for project performance became higher. Students have become more organized. Their actions are more systematic, and students' activities have become operational.

The use of time trackers when performing various tasks, including projects, contributes to the development of discipline and self-organization of students.

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