The Hybrid unlimited education model. Review

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Abstract. This paper addresses the problem of the modern education process. Can the remote education replace the traditional offline classes? Enrollments in higher Australian education dropped by 5 per cent. Postgraduate research enrollments and commencements decreased by 1% and 18% respectively, while other postgraduate commencements also decreased by 28% on 2019 figures. Bachelor degree commencement dropped 14% over the same period. We sure this is the time for developing a new global education market. Colleges and classical Universities should change their education model.

Keywords: *education process; web technology; dualingo; tandem; hybrid education model.*

1. Introduction

The globalization of the job market in the context of a pandemic has opened up remote work opportunities for many professions which were previously available only to representatives of the IT sector. Working on the beach with a laptop - this attractive image has long been a kind of business card of many trainings and courses teaching professions of the future. Nowadays, a cook, teacher, and an hire-specialist can work remotely as well. We will not consider the inevitability of automation of many professions, instead of that we will pay attention to modern approaches to training.

Remote learning today is a given that should be accepted. It hides both excellent opportunities and obvious shortcomings.

The Covid-19 pandemic has unveiled the importance of establishing proper channels of remote learning. While distance learning was primarily used by students who lived in remote areas or couldn't access in-person classrooms, it's now necessary for anyone enrolled in an academic institution. Corporations and educational institutes that rely on distance learning find that they cut costs substantially. Most online learning degrees are also cheaper than in-person learning, since students don't have to commute to class. Many universities also offer cheaper remote instruction since students enrolled in these programs don't need to use on-campus resources [1].

On the other hand, remote education is a tool of globalization. A new high-tech cross-border education market is being created right before our eyes. After all, what can prevent a student from Russia from enrolling and studying remotely at an university in Australia, given the enough quality?

This means that all the advanced educational organisation of the world will certainly have to join the fight for such students. The situation is similar with teachers and researchers. Opportunities to teach a large number of students, to apply their own author's methods in different countries - this also means a struggle for teachers. After all, now nothing will prevent a teacher who is in the United States from conducting classes and entire courses, for example, in Australia and vice versa .

It is obvious that the main working tool of such globalization is the English language. Students should own it, as well as teachers.

According to the statistics for 2018, the share of foreign students studying remotely at universities in Australia was 3% [2]. In 2020, there were 882,482 enrolments generated by 686,104 full-fee paying international students in Australia on a student visa. This represents a 7% decrease in enrolments on 2019 compared with an average annual enrolments growth rate of 7% per year over the preceding five years. Commencements decreased by 22% on 2019. This compares with the average annual commencements growth rate of 1% per year over the preceding five years [3].

2. Hybrid unlimited education model.

There are many learning models [4]. It is obvious that our own human life is a kind of school, and we learn every day. If we combine all these concepts into one, what do we get? Remote education, English, continuous learning-this means that a modern person should have the opportunity to learn technically throughout his life. If you have completed English language courses, this does not mean that the training is over. If you graduated from the university, it does not mean that your professional training ended there. It must continue.

Consider the popular platforms for learning English:

2.1 Dualingo.

Duolingo uses the method of unconscious learning for the steady assimilation of material and strengthening communication skills in a foreign language. The Duolingo courses comply with the CEFR (Pan-European System of Foreign Language Proficiency Levels), which is an international standard [5]. Duolingo is a commercial language-teaching platform that offers free courses on mobile apps and on the web. This study reports the ACTFL listening and reading proficiency levels of adult Duolingo learners who had completed the first seven units of course content in Spanish or French (from the English user interface). The participants (n=340) were learners who had little to no prior proficiency in the target language and used Duolingo as their only learning tool. The participants of the study reached Intermediate Mid/High in reading and Intermediate Low in listening on the ACTFL scale. Their reading and listening scores were

comparable with those of university students at the end of the fifth semester of study as reported in Tschirner (2016). The median amount of time learners spent on completing the first seven units was 203 hours. The findings of the study suggest that Duolingo can be an effective tool for foreign language learning at an intermediate level, especially in developing reading and listening skills [6]. This means The proficiency scores of Duolingo learners were comparable with the proficiency outcomes of students at the end of their fifth semester in upper-division US-based university language programs. In conducting this study, we hope to have shed light on the potential effectiveness and comparability of Duolingo, as measured through standardized tests, to more traditional settings. Future studies will continue to build on our findings at other levels of study, in other linguistic domains, and in other target languages. And Beginning-level courses equivalent to four university semesters [7].

It would be a marketing, but the author of this work has been using this app for two year and this approach works.
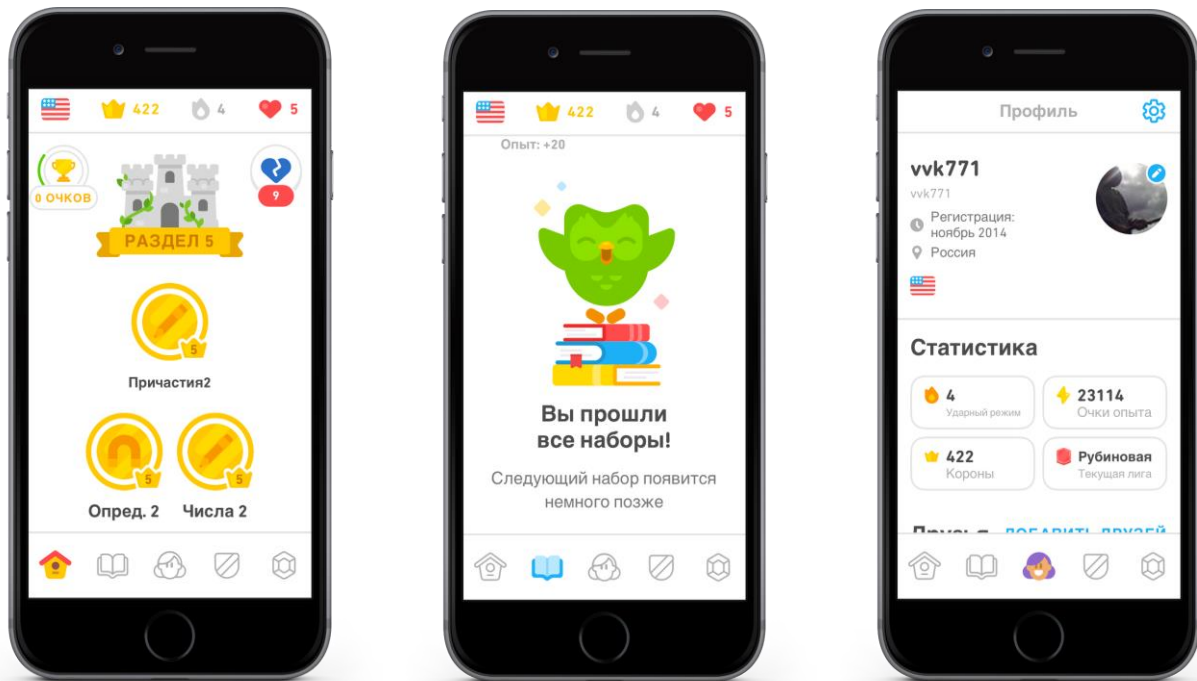

Figure 1: Screenshots of the Dualigo application in the author's user account

It is noteworthy that the application constantly keeps statistics on the frequency of repetition of words, sends reminders and generates quick lessons to interest the user who has abandoned the training.

2.2. Tandem Language Exchange App. I

This is a language learning app where you can find a conversation partners. It makes so-called language exchange process, the process of joining forces with someone, known as your

language exchange partner, who is ideally a native speaker of the language you want to learn. Through a two-way process of direct communication and conversation, both learners are given the opportunity to improve their target language skills and proficiency while simultaneously fostering intercultural competence [8]. Moreover they introduced Tandem languages certificate. It helps members verify their English language level. The Tandem Tests have been carefully designed to correspond with the levels in the Common European Framework of Reference (CEFR), an internationally recognized system for learning languages established by the Council of Europe. Tandem currently offers four tests to examine English level proficiency: A2 (Beginner), B1 (Intermediate), B2 (Advanced), and C1 (Fluent) [9].

Figure 2: Screenshots of the Tandem application

Besides, the application offers to hire a paid tutor for individual classes from among certified users. Nowadays, the app gives their user an opportunity to improve their language skill using language exchange partners and professional tutors as well.

2.3. SkyEng.

Lessons with a teacher in the Skyeng online school can be called a classic learning model based on a modern web platform. The largest online school in Europe [10].

They suggest:

– online classes with teachers;

– interactive tasks;

– video-collection with subtitles;

– speaking clubs;

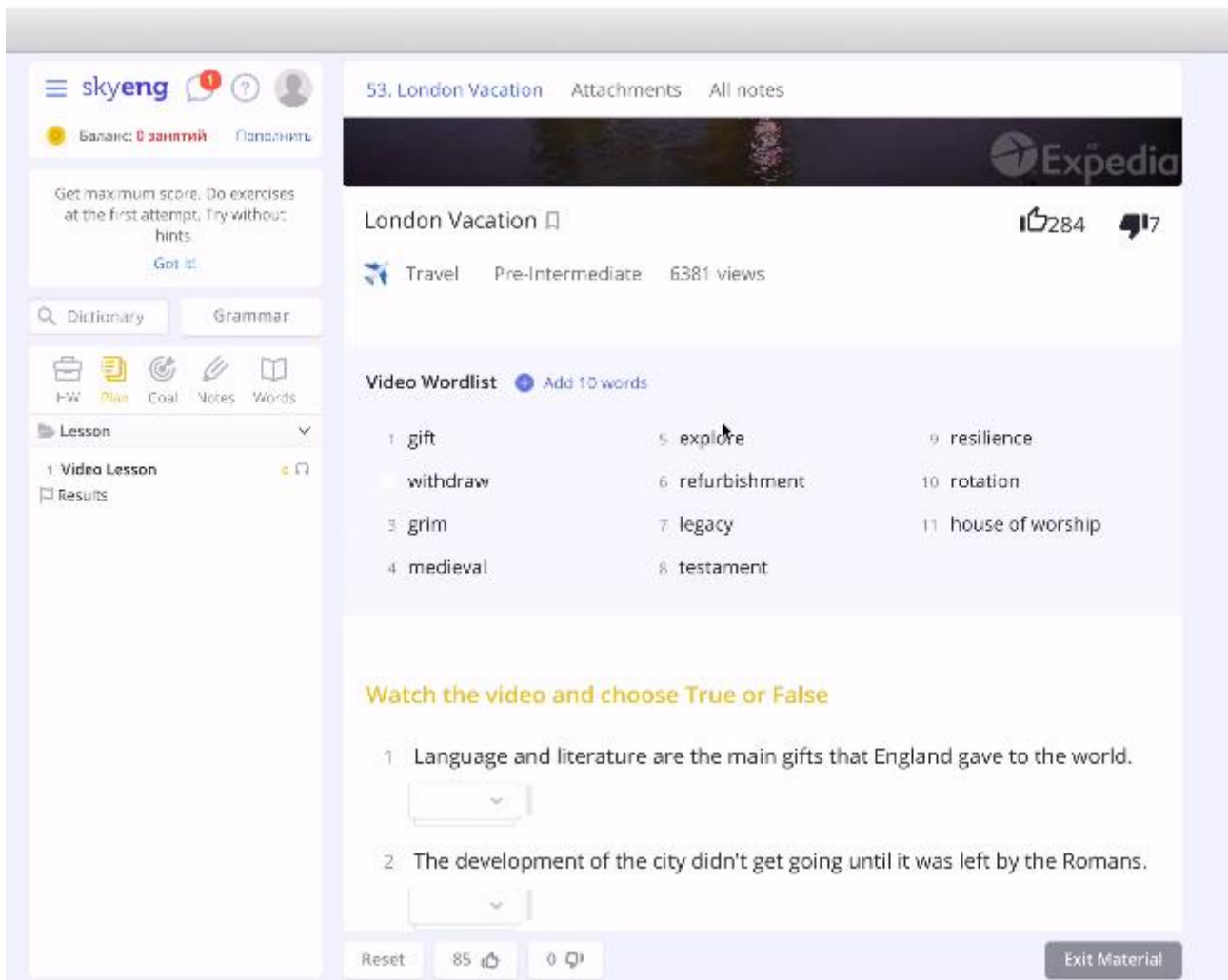– testing and individual plans of education.

Figure 3: Screenshots of the SkyEng web application

Trainings for IELTS, TOEFEL, a job interview. The teacher is paired with a smart platform to monitor your progress and adjust the training plan.

2.4. AMES Australia.

For seven decades the organisation has been supporting newly arrived refugees and migrant settle in Australia, helping to build our marvelous multicultural society [11]. AMES Australia has played a significant role in successfully settling hundreds of thousands of new arrivals with our broad range of settlement, English language and employment services. In fact, this organization aids improve English as well as find job for immigrants.

It is not for nothing that we have given these examples of organizations that are engaged in teaching English for their main purpose. After all, if we combine all this, we will get the modern cross-border hybrid continuous learning model that should be adopted by any professional higher education institution. It does not matter whether he is studying English or some professional specialty. The model includes:

‒ a modern digital platform that will help students learn using modern practices of gamification, task adaptation and personalization;

‒ intelligent homework system;

‒ a modern communication platform between students, professionals, colleagues and teachers;

‒ qualified teaching staff around the world;

‒ modern teaching methods, including author's ones;

‒ certification according to the standards;

‒ professional development;

‒ employment and career opportunities.

3. Intelligence system of home works. Math aspects.

Such a system will allow students to receive individual tasks depending on the mistakes made and the time spent on each task, and it will also be possible to choose the direction and training in accordance with the needs, skills and knowledge of the student. After completing the homework, the system determines based on the analysis which task will be offered to the student next. After each completed task, the system updates the student's data and makes a report on completed homework. When all the homework is completed, the teacher or the platform as a whole can give the student admission to the test to move to the next level.

Let's imagine that each task is a training exercise based on a separate mini-application of a certain type. Each such mini-application has its own set of parameters, for example, the number of examples, the number of digits in the examples, a mathematical operation (multiplication, division), etc. Each parameter can have several levels (values) that configure the exercise and thus affect its complexity. For example, the parameter "Number of examples" can have levels: 2, 4, 6, 8, 10, 12.

Also, the teacher or manager sets a Zero standard – passing values according to the criteria for evaluating the solution of this type of exercise when choosing the standard level of parameters (default parameters). The criteria are:

‒ the time of solving the exercise, sec.;

‒ the percentage of correctness, %;

‒ number of attempts.

Each level other than the standard one has coefficients of influence on deviations of the zero standard when choosing this level. Thus, if the standard level of the parameter "Number of examples" is six, therefore, the value of the zero standard reflects the minimum indicators according to the criteria, when the student reaches the task will be counted as completed. If the teacher

changes the level of the parameter "Number of examples" and sets it to twelve, it is expected that the values of the zero standard should be adjusted in the appropriate dependence. This is what the coefficients of the level's influence on the value for each criterion of the zero standard allow us to do.

It means, if the exercise has 5 parameters, respectively, the teacher chooses 5 levels. Each such level has 3 coefficients (for each criterion). Then these coefficients are multiplied to find the total coefficient for the value of the zero standard according to the corresponding criterion. Thus, the system receives an adjusted standard for this particular exercise with certain levels of parameters, according to which the student's performance of the exercise will be evaluated.

The formula for calculating the total coefficient for each criterion is as follows:

$$G_k = \prod_{p=1}^{n} I_{P_j},$$

where G_k – is the coefficient of change of the zero standard for a certain criterion; I_{P_j} – is the coefficient of the parameter level.

The changed standard for each criterion is found according to the formula 2:

$$N_k = N_{k_0} * G_k, \tag{1}$$

where N_k – the value of the standard for a certain criterion, based on the entered parameters; N_{k_0} – the value of the zero standard for a certain criterion.

The formula for calculating the deviation of the obtained data for the criteria from the standard:

$$O_k = 1 - \frac{N_k}{N_{kz}}, \tag{2}$$

where O_k – deviation of the received data from the standard; N_{kz} – the value for a certain criterion formed after completing the homework.

After calculating the standard, the system processes the student's answers and compares them with the calculated standard. If the standard is not passed, the system finds a deviation of the student's results from the standard, forms training tasks according to the level of this deviation and automatically sets new levels of parameters for them. At the same time, the deviation level helps the system to most accurately set the parameters of the exercise so that the student can cope with it and be brought to the solution of tasks of the initial level of complexity.

Let's take an example for the English language. The parameters of the exercise are: the number of examples, the type of action (choose the correct answer, enter the correct answer, dictate

the correct answer). Criteria: the speed of execution, the percentage of correct execution and the number of attempts. To issue the next task, the deviation from the standard for the criteria "speed of execution" and "number of attempts" must be less than or equal to 0, and for the criterion "percentage of correctness of execution" must be greater than 0. In case of a different result, a training task is issued.

The zero standard for the criteria:

1) execution speed – 60 seconds;

2) the percentage of correct execution – 95%;

3) number of attempts – 1.

Starting parameters:

1) number of examples – 6;

2) action - choose the correct answer.

The teacher set the following parameters:

1) number of examples – 12;

2) operation-dictate the answer.

Table 1 shows the formed coefficients based on the entered parameters..

Table 1: Coefficients for the selected parameters

Criteria / Parameters	Execution speed	Percentage of correct execution	Number of attempts
Number of examples	2	1	2
Choose the correct answer	1,1	0,96	1

Using formula 1, we calculate the coefficient of change for each criterion:

$$G_{kc} = 2 * 1,1 = 2,2.$$

$$G_{k\text{в}} = 1 * 0,96 = 0,96.$$

$$G_{k\text{п}} = 2 * 1 = 2.$$

Next, we will find the value of the standard for each criterion according to the formula 2:

$$N_{kc} = 60 * 4 = 132 \text{ сек.}$$

$$N_{k\text{в}} = 95 * 0.96 = 91.2\%.$$

$$N_{k\text{п}} = 1 * 2 = 2$$

For example, a student completed the exercises in 185 seconds, the percentage of correctness is 80%, and all this in one attempt. We calculate the deviation of the obtained data from the standard for each criterion according to the formula 3.

$$O_{k\text{с}} = 1 - \frac{132}{185} = 0{,}28.$$

$$O_{k\text{в}} = 1 - \frac{75}{80} = 0{,}06.$$

$$O_{k\text{п}} = 1 - \frac{2}{2} = 0.$$

Based on the data obtained, the student should be given a training task due to the fact that he spent too much time on homework. These calculations show an approximate mathematical model of the operation of such an algorithm.

4. Results and discussion

The hybrid model will obviously help the educational institution to make its brand recognizable, to spread its teaching methods almost infinitely. An intelligent adaptive model for those who want and can study independently based on the materials and experience of the college, a remote model of working with students around the world. The opportunity to provide post-training to former students: training should not end after receiving a diploma/certificate/certificate. The hybrid model is an opportunity for a person to improve their knowledge by steps and throughout their life.

Students who have completed their training can continue training in the app. Get information about new training programs, teach yourself and form your own individual educational track.

Graduates who were currently employed were asked about how they had found out about their job [12]. The main avenue identified by respondents was through job advertisements or approaching employers directly. Overall, 44 per cent of graduates first found out about their job through an advertisement or by approaching employers. More specifically, advertisements on the internet were the most common way graduates had found their job (26%). The second most common way for finding employment was through personal networks, with 26 per cent of graduates finding their job either through friends of family or with the assistance of work contacts or networks. For graduates who were living in country on their passport, personal networks were more commonly utilised with 29 per cent of graduates using their personal networks to find their job compared with 23 per cent of graduates living in Australia.

Employees that were in part-time employment were also more likely to have used personal networks to find their role (36%) and also graduates who were not in their preferred industry were

more likely to have used personal networks to find their employment (35%). This suggests that personal networks are more frequently helping graduates find temporary employment. .

A focus on employment with a 'career' orientation was identified by graduates as the most important factors when selecting their current employer. Opportunities for personal or professional development (26%) and career opportunities (17%) were the two most common factors when selecting their current employer, while the profession (12%) was also a popular answer. Only nine per cent of graduates rated salary as the most important factor in selecting their employer.

Can an employer be interested in an inexpensive but qualified and promising employee who does not yet know the language? How can an employer or investor find out about a candidate if he does not enter the labor market of his country? And what if a person who has made a decision to enter the international labor market for himself has started studying a foreign language, but still has one or two years left, if such a specialist will fall into the field of visibility of potential employers. Then it will be a potential opportunity for the employer to find out about an interesting candidate a few years before he comes to the international labor market himself. It is also an opportunity to learn about scientists, talented young people even before they start publishing in English.

5. Conclusion

Computerization, border closure and globalization are opening up the global distance education market for educational institutions. Modern technologies and standards dictate their own rules. Any educational institution that has entered this race for world markets can become a new leader and gain popularity along with all recognized classical universities. The proposed hybrid learning model is based on the author's personal and teaching experience. On the other hand, as an active web developer, the author sees the possibility of applying the practical experience of several successful educational platforms based on one educational institution.

Further research is proposed to focus on the development of the concept of the connection of the learning process with potential employers.

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