

Digital Badging Platform

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Abstract- During current days if we saw due to Covid most of things specially if we talk about education, it becomes online and students & teachers both found it difficult to cop up with this situation. It's a sudden change and no one expected that education would become online and no-one is prepared for the same and now we are facing some real issues. Considering student's cases, they lose the motivation to study, there is no competition among peers, classes seem boring to them and they start skipping classes. If we mention the teacher's case, then they won't ready to pay much attention to every student, they still don't know where they're lacking and neither they're ready to deliver the proper system to them. After analyzing this problem, it seems quite big, it becomes important to unravel it. Introducing you to the Digital badges which are truly becoming an appropriate, easy and efficient way for educators, community groups and other professional organizations, to exhibit and reward participants for skills obtained in any professional development or formal and informal learning. I have proposed a web- portal based solution for the above problems, which aims to solve the problem of motivation among students and also helps teacher to know their students in a perfect way.

Keywords- Digital badges , web- portal etc.

I. INTRODUCTION

Our major goal is to improve education system. The idea is instead of saying we can add more facilities to the future one but we are trying to improve the present ones. This idea does not provide free education material to schools but it tries to improve the education level of schools which already have great teachers but are still doing bad in terms of result. As we know, students are not enough motivated in Schools/Colleges to learn something new and there's nothing in School or College systems which can motivate students to do more.

We're building a platform where students would be receiving badges according to criteria set by school or college authorities and as they start receiving some badges there would be a competition among them to earn more, as College authorities could set some target that let's say if some student is receiving 5 badges, then s/he will be declared as a class monitor for that month or might be some other rewards to motivate them.

Also, in the end the teacher would be getting benefit as they can see the statistics of their students like which student is doing good in which area, who needs more improvement, and they can contact them or their parents. The idea also tries to solve one major issue "interest of students". A lot of students don't know what they want in life. But the area in which they received most badges can help them choose their career path for sure. Learners can celebrate, measure, and record their accomplishments with digital badges they earn when completing a specific

timeline set by their teachers. Digital badges can be shared across social media platforms and are secured and can be verified through scanning unique QR code for each badge, making them a portable, personal record of achievement. Not only can this validate and grow skills and capabilities across the school/college, but it can also inspire the learners to highlight and celebrate their accomplishments.

II. METHODOLOGY

1. Market Research & User survey:

Upon realizing the problem statement, I conducted a user survey and market research to validate my hypothesis. I first started with a user survey where I floated the google form among my peers to understand their needs and pain points.

In 3 days, I got an amazing response from 30 students, where I asked simple questions -

- How your college day is looks like since pandemic?
- Do you found it difficult to cop up with the online classes?
- What are the changes in your habits since pandemic?
- Do you complete your assignments at time?
- What are the problems you face generally as a student?

After getting response I analyzed them to better understand the pain points, I realize students are really facing issues while coping up with the college education due to the online classes. Here thus I validated my hypothesis. But I still want to understand, does Digital

badges have a market value? Or if I build a solution around, would that be useful.

Therefore, after this I did secondary I.e., market research as well, to search about Digital Badges market. I searched all over the internet about digital badges to learn more about them, here are the findings that I got –

- Digital badges in the education market are gaining important adoption among recent businesses across the globe.
- Market value has been projected to increase at a good level.
- The global digital badges market was valued at USD 71.36 Mn in 2018 and is projected to reach USD 294.28 Mn by 2025.
- Total value is growing at a CAGR of 18.96% from 2019 to 2025.
- More institutions are adopting digital badges.

2. Existing Portals:

There are few existing portals, which also tries to performs something like my idea, doing competitive research helps me to stand out of my competitors, listing them a few below -

- 2.1 <https://openbadges.org/>: Open Badges is that the world's leading format for digital badges. Open Badges isn't a specific product or platform, but a sort of digital badge that's verifiable, portable, and filled with information about skills and achievements.
- 2.2 <https://info.ciedly.com/>: Issue digital badges, gain insights about your workforce, and supercharge profiles in your applications on the world's largest digital credential network.
- 2.3 <https://www.accreditable.com/digital-badges/>: Whether you're recognizing an achievement, illustrating skill accumulation, or incentivizing behavior, Accredible makes designing and awarding digital badges easy and intuitive.
- 2.4 <https://badgcert.com/>: Say goodbye to paper certificates! Join thousands of organizations and lots of earners who excel each day with Badge Cert the leader in digital badging and credentialing.

III. PROPOSED PORTAL

Initially research helps me in validating my idea, thus after that I start preparing landing page for the project, making its UI good is also an important aspect of the overall project, although not only UI but having a good UX is crucial too.

This would be a full-fledged frontend + backend project where I would be working on both sides, frontend for making the whole UI and animations, in backend there would be different things like assigning timelines to students, making badges, certificates and much more.

Talking first about the student side portal, a student can see the initial timeline setup by their respective teachers, a student can see all their timelines for particular subjects they are enrolled in and can see all the timelines, this gives a student an overall view of the curriculum and prepare accordingly, once a student completes a particular timeline, s/he would receive a badge, not only badge but a verifiable certificate from the portal as well, which remains unique for every student.

Now for the teachers (client side), the case is even ad more features, first they would be providing a file explore like structure where they can upload and store badges according to their needs. They would be having a separate section for creating the timelines. Once they created a timeline, they can push the same for students such that they can see that. Also, they would be having an extra feature of analytics, they can analyze how the students are performing, in which subject they are lacking and much more.

Ater this there's one more feature, for the clients, let's say someone doesn't want to come to our website, but wants to directly integrate it in their one's, they can do so, I've created an API, so that anyone who wants to integrate the whole portal can do so easily, without any extra efforts.

IV. TECHNOLOGY STACK

1. NodeJs:

It is an asynchronous event-driven JavaScript runtime and Node.js is designed to build scalable network applications.

2. ExpressJS:

The server runs on a local port using ExpressJS which is a Node.js framework which provides a simple routing for requests made by clients. It also provides a middleware that's liable for making decisions to offer the right responses for the requests made by the client.

3. Jimp:

JIMP is a free and open-source raster graphics editor used for image manipulation and image editing, free-form drawing, transcoding between different image file formats, and more specialized tasks. JIMP is released under GPL-3.0-or-later license and is out there for various multitasking operating systems.

4. MongoDB:

MongoDB is a source-available document-oriented data_base program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server-Side Public License.

5. EJS:

EJS or Embedded JavaScript Templating is a templating engine used by Node.js. Template engine helps to make an

HTML template with minimal code. Also, it can inject data into HTML template at the client side and produce the ultimate HTML. EJS may be a simple templating language which is employed to get HTML markup with plain JavaScript. It also helps to embed JavaScript to HTML pages.

V. RESULTS

The main purpose of the portal is to make student productive and help them in their education, and at the same time to help teacher analyze how their students are performing and make their work flow easy. This portal would make a large impact on a global level and make education easy for everyone.

VI. SCALABILITY & EFFECTIVENESS

The whole solution could be implemented very easily and is scalable too. The technologies we're using are industry relevant technologies and best part is things could be easily modifiable, for example if we need to monitor even teachers (for senior staff) we can do the same easily by providing them access to the database too

VII. CONCLUSION

The question is as old as business itself: what are the simplest thanks to recognize an achievement? Is it through public & family appreciation or acknowledgement, offering trophies, or certificates? With the entire world moving online, the solution might dwell 'Digital badges', which have proven to be wanted during the continued pandemic-led lockdown.

As they will be shared across email, and social media platforms, more people happy displaying them among their peers, boasting of a recent accomplishment. A digital badge not only is that one person learns something, but it also shows how one is dedicated towards a particular subject

REFERENCES

- [1] Cator, K., Schneider, C., & Vander Ark, T. (2014, April). Preparing teachers for deeper learning: Competency-based teacher preparation and development. Retrieved from <http://cdno4.gettingsmart.com/wp-content/uploads/2014/01/FINAL-Preparation-g-Teachersfor-Deeper-Learning-Paper.pdf>
- [2] Hart Research Associates. (2015, January). Falling short? College learning and career success: Selected findings from online surveys of employers and college students conducted on behalf of the Association of American Colleges & Universities. Retrieved from <http://www.aacu.org/sites/default/files/files/LEAP/2015employerstudentsurvey.pdf>
- [3] Hickey, D. (2012). Recognizing, supporting, and attracting adult learners with digital badges. Retrieved from http://www.evolution.com/program_planning/recognizing-supportingand-attracting-adult-learners-with-digital-badges/
- [4] McWhorter, R. R., & Delello, J. A. (2015). Green computing through virtual learning environments. In F. M. Nafukho & B. J. Irby (Eds.), Handbook of research on innovative technology integration in higher education (pp. 1–28). Hershey, PA: IGI Global.
- [5] Nilsson, B. (2014, October 8). Analytics and competency-based education (CBE). Lessons from EDUCAUSE 2014: How CBE will revolutionize higher education. Retrieved from <http://www.extensionnetworks.com/analytics-and-competency-based-education-cbe>