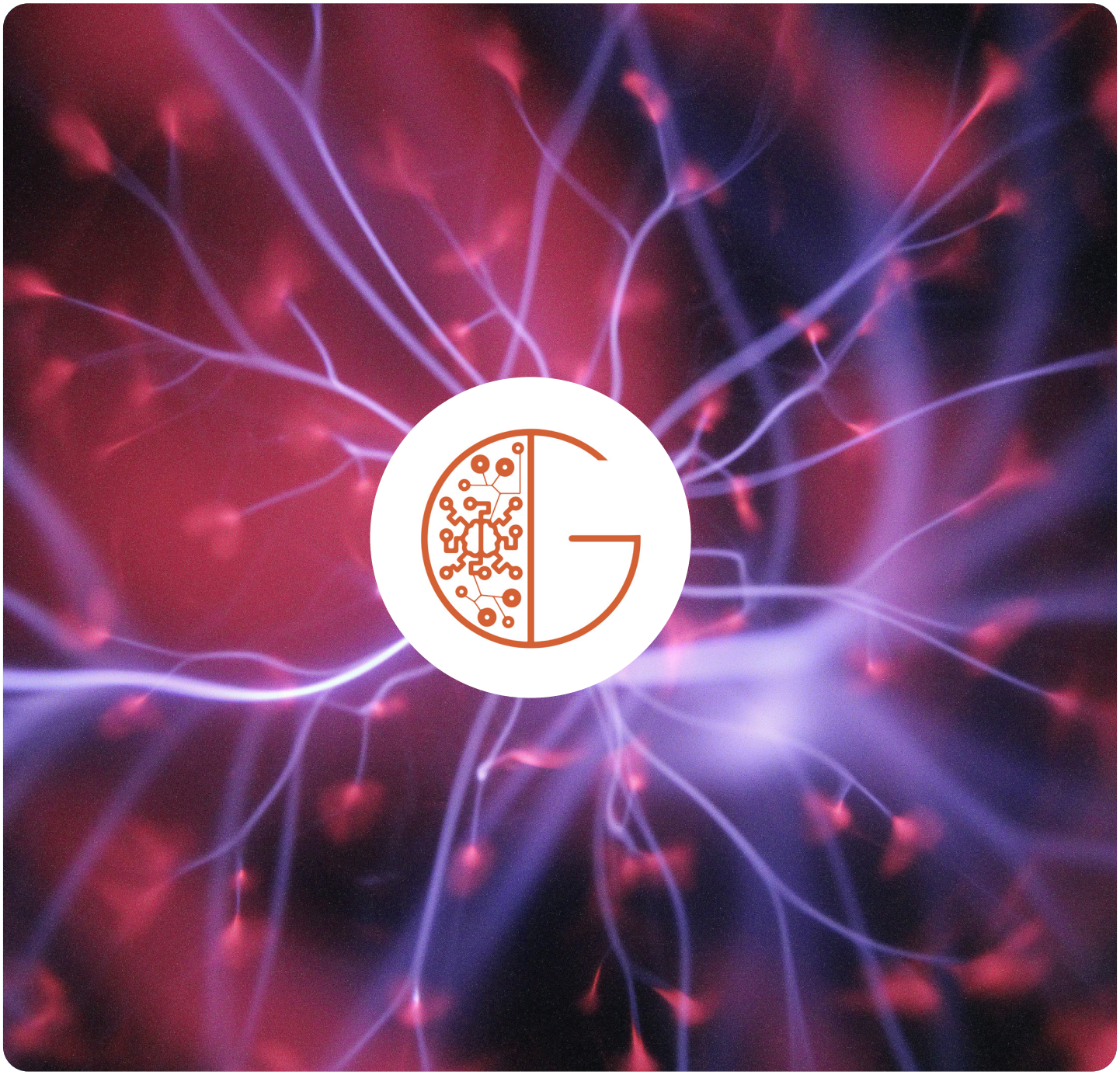
Smartail

Delivering Decision Science to Educators



Empowering Educators

with Artificial Intelligence

The opportunity for AI

Being an educator is one of the noblest professions an individual can get into. An educator can have a **powerful impact on a student's life,** both positive and negative. Teaching is one of the few professions that directly affect the future of our nation, and though this may be considered a cliché, the truth of the matter is that **an educator may have a larger impact on children's lives** than some of their parents.

It's been estimated that almost 40-50% of a teacher's time is spent on grading homework/classwork/tests/exams etc.. Though they spend so much time on manual grading, do they get insightful data that can help improve students' learning ? No !. What if we automate the grading process and save 40-50% of the teachers' time and provide them with rich, actionable insightful data?. The teachers can spend their time analyzing how they can improve their students' learning process. Not just the grading, the process of report card creation, publishing of grades and insights to students becomes easier. Bias in grading, which may otherwise be caused through manual grading can also be eliminated.

There are a lot more scenarios that have been automated through DeepGrade that can add exponential value to the educators. Is there a way to quickly conduct a test, right after a lesson is taught and identify the learning gaps ?. DeepGrade can get this task done , just like that. Yes, teachers can use DeepGrade, right after they complete teaching a lesson, give the students a quick test with few questions and use DeepGrade to grade them. In a few minutes, the teacher gets the grades and the actionable, insightful analytics that can help them identify the learning gaps. This can help the teachers identify concepts or topics which the students failed to understand and can aid the teachers plan remedial measures to improve student performance.

So we embarked on a journey to unearth the challenges faced by the educators daily, to make a customized attainable educating/learning experience. We also try to reduce the time spent on correcting a multitude of papers by providing basic key-answer validation previously configured by the educator. To be honest, getting DeepGrade to where it is right now was not an easy task. The challenges we faced were many and introducing AI into EduTech is not a terrain previously ventured given the complexity of the problem statement itself.

About us

Smartail was founded in 2019 for bringing innovative and efficient solutions to address problems in the education sector with the power of Artificial Intelligence. The founders of Smartail felt that there was still a huge gap in terms of Industry expectation and talent availability. It pushed them to get to the root cause of this perennial problem and find a solution for this – Thus Smartail was created. One of their key findings was that this pain area is something that must be addressed from the grassroots, right from educational institutions. They also believe that Artificial intelligence can make a significant impact in driving this solution, also the key is not only to address the pain of the students but their gurus, for a simple reason you empower and enable one teacher you impact thousands of students. Thus, the first product of Smartail "Deepgrade" came into existence.

Challenges Tackled

A few of them...

1

Handwriting Recognition

Each student handwriting is very unique and is a challenge to recognise. We are the pioneers in accurately recognising students hand writing and we perfected it. This perhaps is the fundamental step in AI Digital grading.

2

Grading of Subjective Answers

Different children in a class could write the same answer in his/her own unique way. So the solution that we create should grade accurately even if children use different verbs, vocabulary, adjectives or sentence constructs as long as the meaning and context are correct.

3

Diagram Grading

Student answers involving non-character solutions such as Maps, Graphs, Formula Substitutions, Labeled diagrams and Chemical Equations proved to be hard to recognize due to the different ways they can be presented on a paper, including but not limited to, orientation and shading techniques employed.

So we had to find a solution which could parse different parts of a solution and grade answers accurately even if they are presented in different ways.

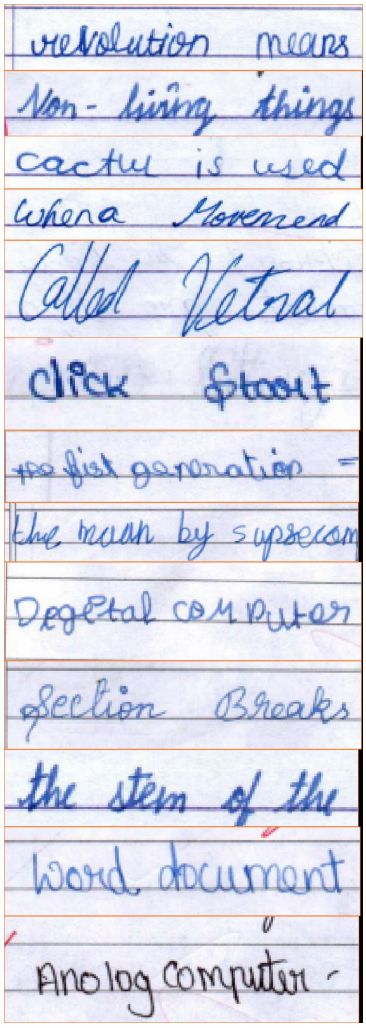
Introducing DeepGrade - Grading of handwritten descriptive answers of students using Artificial Intelligence.

NEP 23.8

" This policy has been formulated at a time when an unquestionably disruptive technology - Artificial Intelligence (AI) 3D/7D Virtual Reality - has emerged. As the cost of AI-based prediction falls, AI will be able to match or outperform and, therefore, be a valuable aid to even skilled professionals such as doctors in certain predictive tasks. AI's disruptive potential in the workplace is clear, and the education system must be poised to respond quickly. One of the permanent tasks of the NETF will be to categorize emergent technologies based on their potential and estimated timeframe for disruption, and to periodically present this analysis to MHRD. Based on these inputs, MHRD will formally identify those technologies whose emergence demands responses from the education system.

National Education policy, India - 2020

Handwritten Text Recognition



97% Accuracy

Ever Learning & Ever Improving

AI Powered Handwriting Recognition

Hyper Personalised

Multi-Parameter **Uniqueness identification**

Beautiful / Ugly / Cursive handwriting is only a human perception not for AI

Smartail - Pioneer in extracting young adult handwriting. Most handwriting recognition softwares are focusing only on adult handwriting, but we look at students and kids handwriting which is ever evolving and more inconsistent.

The students handwriting is very good in the first two pages and after which it **slowly deteriorates towards the end** of the answer paper. We understand this.

We understand different parameters such as pen pressure, slant angle, curve degrees and more to extract the handwritten content of kids. Analysis of these different parameters helps us in accuracy improvement and personalisation of handwriting recognition.

AI is a technology that is ever learning and ever improving. The handwritten text extraction accuracy improves when it is used extensively.

NEP 23.9

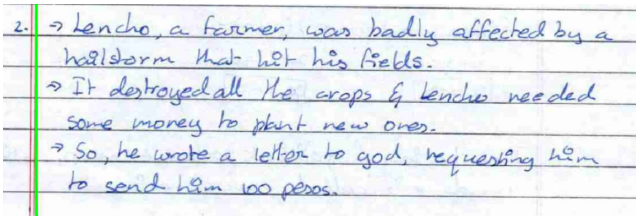
In response to MHRD's formal recognition of a new disruptive technology, the National Research Foundation will initiate or expand research efforts in the technology. In the context of AI, NRF may consider a three-pronged approach: (a) advancing core AI research, (b) developing and deploying application-based research, and (c) advancing international research efforts to address global challenges in areas such as healthcare, agriculture, and climate change using AI.

National Education policy, India - 2020

Extracting Handwritten texts

Student Answer

AI Extraction


2. → Lencho, a farmer, was badly affected by a hailstorm that hit his fields.
→ It destroyed all the crops & Lencho needed some money to plant new ones.
→ So, he wrote a letter to god, requesting him to send him 100 pesos.

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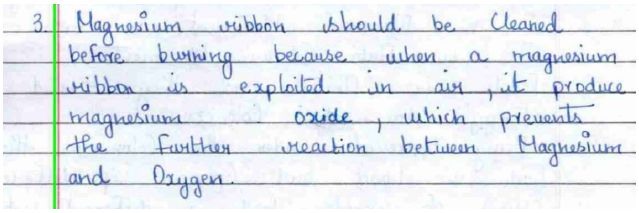
3. Magnesium ribbon should be Cleaned before burning because when a magnesium ribbon is exploited in air, it produce magnesium oxide, which prevents the Further reaction between Magnesium and Oxygen.

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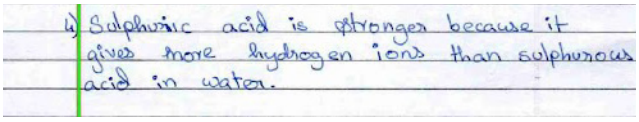
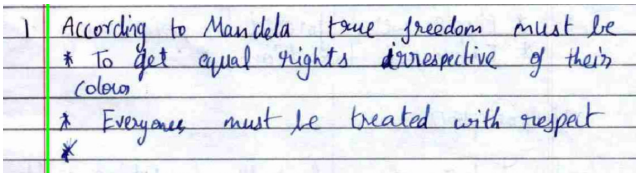
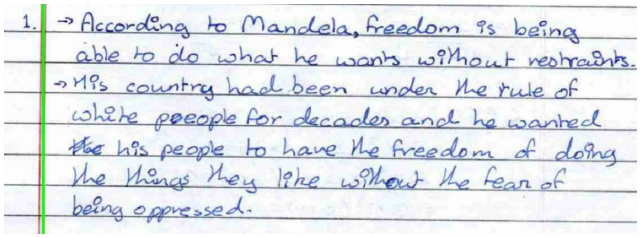

4) Sulphuric acid is stronger because it gives more hydrogen ions than sulphurous acid in water.

Sulphuric acid is stronger because it gives more hyderogen ions than sulphurous acid in water.


1 According to Mandela true freedom must be
* To get equal rights irrespective of their colour
* Everyones must be treated with respect
*

According to Mandela true freedom must be To get equal rights irrespective of their colour Everyones must be treated with respect


1. → According to Mandela, freedom is being able to do what he wants without restraints.
→ His country had been under the rule of white people for decades and he wanted his people to have the freedom of doing the things they like without the fear of being oppressed.

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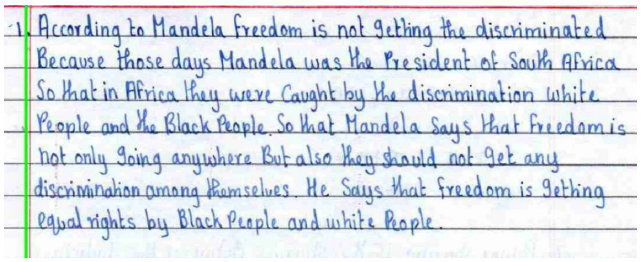
1. According to Mandela freedom is not getting the discriminated Because those days Mandela was the President of South Africa So that in Africa they were Caught by the discrimination white People and the Black People So that Mandela Says that freedom is not only going anywhere But also they should not get any discrimination among themselves. He Says that freedom is getting equal rights by Black People and white People.

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DeepGrade

Bring-in the power of AI to your

Daily Classroom
Home Work
Exams
Test

DeepGraded Results

Data

- Effectiveness of the lesson taught
- Learning Gaps from Data Analysis
- Each Question – Detailed Analysis
- Student performance

Driven

Decision Science

- Should I re-teach the lesson again ?
- Should I take a remedial class for certain students ?
- Should the methodology change ?
- Should the examples change ?

Triggers Critical Thinking

Case Study

A sample assessment for **Class 10 CBSE was conducted**. The assessment includes questions from English, Science, Maths and Social Science. This case study will help us understand how DeepGrade evaluation and inferences from it will help teachers to identify the learning gaps.

Question Paper

Deepgrade Assessment

Class : X Subject : All CBSE

English

1. What according to Mandela is 'true freedom'? *(3 marks)*
2. Why did Lencho write a letter to God? *(3 marks)*

Science

3. Why should a magnesium ribbon be cleaned before burning in air? *(3 marks)*
4. Among sulphurous acid and sulphuric acid, which is stronger and why? *(3 marks)*

Mathematics

5. Find the roots of the following quadratic equations by factorization: $x^2 - 3x - 10 = 0$ *(3 marks)*
6. Solve the quadratic equation $x^2 + 5x + 6 = 0$ *(3 marks)*

Social Science

7. What is meant by power sharing? *(3 marks)*
8. How the First World War helped in the growth of the National Movement in India. *(3 marks)*

NEP 24.4

(h) Online assessment and examinations: Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics. Studies will be undertaken to pilot new ways of assessment using education technologies focusing on 21st century skills.

National Education policy, India - 2020

Sample Answer Sheet

Class : X CBSE

RN112

S. Tharika
X-A3
Camlin Page

1. According to Mandela, The true freedom is to be without racial discrimination.
★ Even He considered the freedom for individual as the freedom for himself.

2. letter to God was written Lencho as he was under the trobb of not getting enough yield for the year.
In that letter he asked for 100 pesos as he was under loss. He was unable to run his family.

3. Magnesium ribbon should be cleaned before burning in air because it will react with O_2 present in air and form MgO which will not react with O_2 and burn. Therefore, the Magnesium ribbon should be cleaned.

$$2Mg + O_2 \longrightarrow 2MgO$$

4. Sulphuric acid is stronger than sulphurous acid. Because, it has very low ph value and it has high content of H^+ ions.

Camlin Page

5. $x^2 - 3x - 10 = 0$

If $x - 5 = 0$ | $x + 2 = 0$

$x = 5$ | $x = -2$

$\alpha = 5$ | $\beta = -2$

The roots of $x^2 - 3x - 10 \Rightarrow$ 5 and -2

6. $x^2 + 5x + 6 = 0$

If $x + 3 = 0$ | $x + 2 = 0$

$x = -3$ | $x = -2$

8. First World war helped in the growth of the National Movement in India as it created:

(i) Economic Crisis
(ii) increased taxes
(iii) introduced income tax

Which all, agitated the people of India which led to National Movement in India.

7. Power Sharing is known as Sharing of power from central government to state / Sub-ordinate units.

Prudential reason : to ensure political stability (unity) in a country.

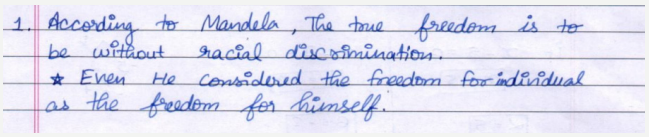
Moral reason : It is the very spirit of Democracy.

AI Grading and Inference

Question 1 What according to Mandela is 'true freedom'?

Example

Student Answer


1. According to Mandela, The true freedom is to be without racial discrimination.
* Even He considered the freedom for individual as the freedom for himself.

Extracted Answer

According to Mandela , the true freedom is to be without racial discrimination. Even he considered the freedom for individual as the freedom for himself.

Answer Key

Obtained Mark 1/3

Covered Points

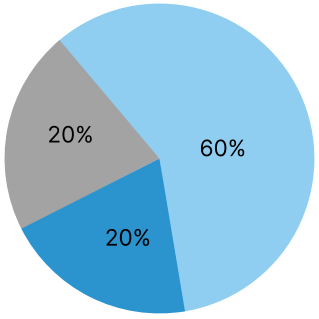
- People should not be discriminated

Not Covered Points

- True freedom means freedom to realize one's true potential
- According to Mandela, "true freedom" is being able to do what one wants without any interference.

Students Class Performance

Overall

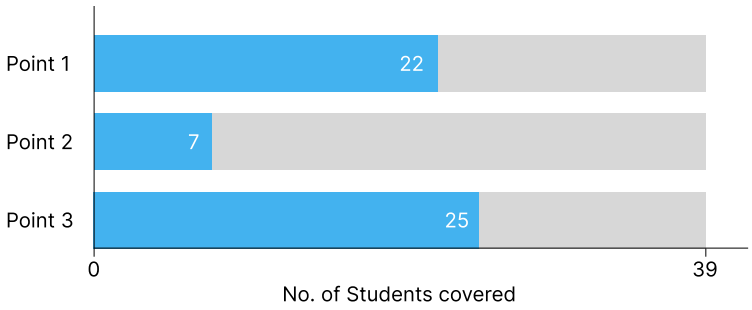


Good (2-3 marks)

Average (1-2marks)

Needs Improvement (<1 mark)

Point Wise



Inference

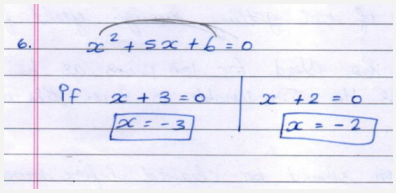
Only 17% of the students covered **Point 2.**

60% of the students understood the context & covered **Point 1 & 3.**

Question 6 Solve the quadratic equation $x^2 + 5x + 6 = 0$

Example

Student Answer



Extracted Answer

$x^2 + 5x + 6 = 0$
if $x + 3 = 0$ $x + 2 = 0$
$x = -2$ $x = -3$

Answer Key

Obtained Mark 2/3

Covered Steps

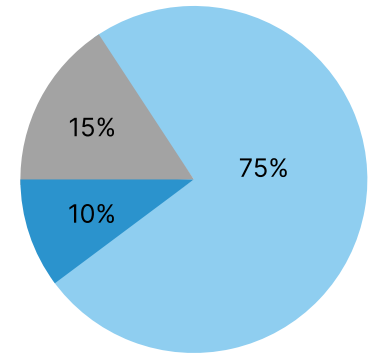
- $x = -2$
- $x = -3$

Not Covered Steps

- $x^2 + 2x + 3x + 6 = 0$
- $x(x+2) + 3(x+2) = 0$

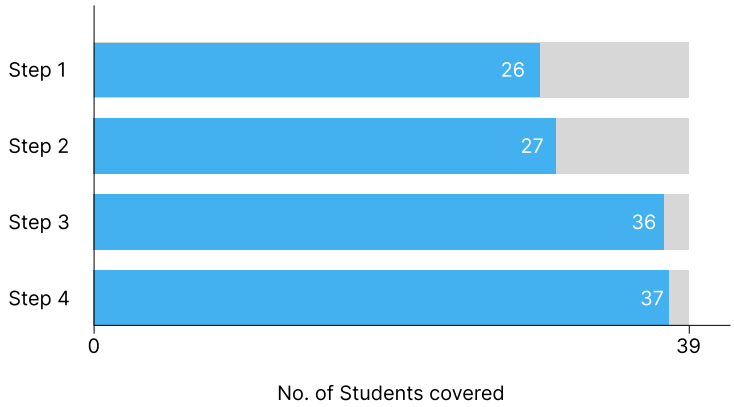
Students Class Performance

Overall



Good (2-3 marks)
Average (1-2marks)
Needs Improvement (<1 mark)

Point Wise



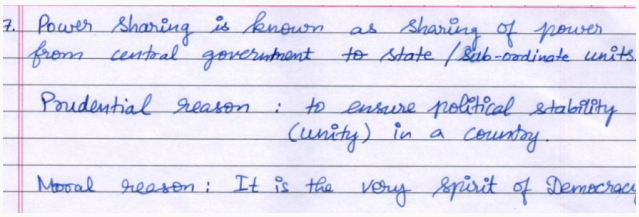
Inference

75% of students in class performed well in Maths Quadratic Equation.
25% of students mentioned the final answer without proper steps.

Question 7 What is meant by Power Sharing?

Example

Student Answer


7. Power Sharing is known as Sharing of power from central government to state / Sub-ordinate units.
Prudential reason : to ensure political stability (unity) in a country.
Moral reason : It is the very spirit of Democracy

Extracted Answer

Power sharing is known as sharing of power from central government to state/ subordinate units. Prudential reason: to ensure political stability (unity) in a country. Moral reason : It is the very spirit of Democracy

Answer Key

Obtained Mark 1/3

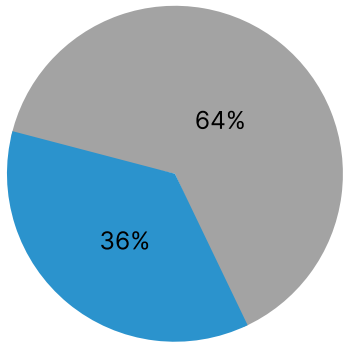
Covered Points

- A System of government in which the power was divided among the subordinate units from the central government.

Not Covered Points

- Power is shared among legislature, judiciary and executive
- Power is divided among the organs of the government.
- Two forms of power sharing are horizontal and vertical form.

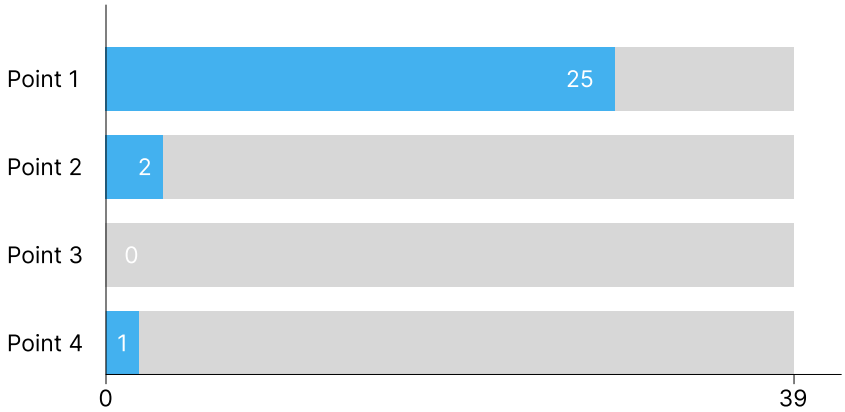
Overall



Good (2-3 marks)

Average (1-2marks)

Needs Improvement (<1 mark)



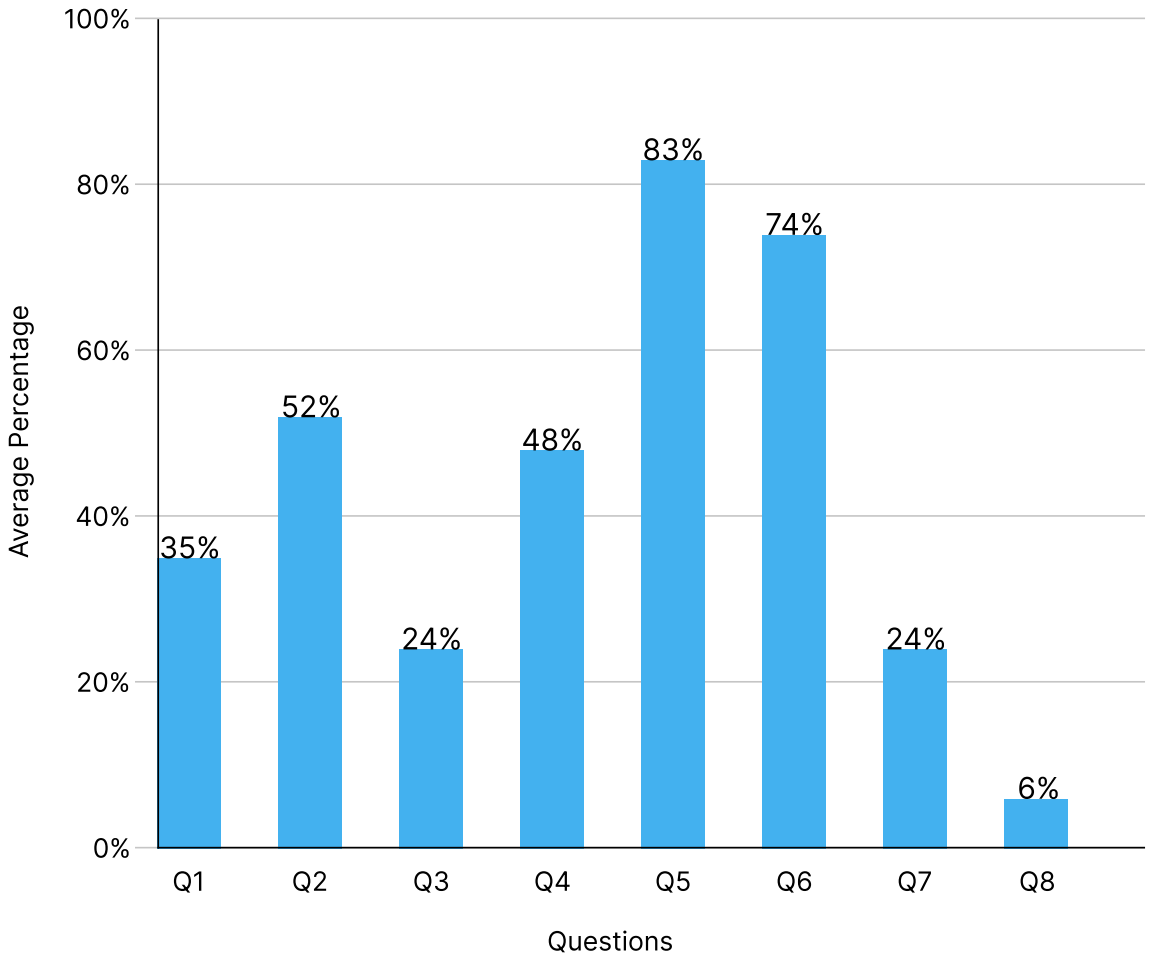
Inference

Point 3 is not attended even one student in the class

50 % of the students has written a point that is not in the answer key

Point 1 is written by 65% of the students in the class.

Case Study
Assessment Performance



Inference

Student Performed well in Q5 & Q6 (Maths) , portrays better understanding in Quadratic Equations.

Students had difficulty in answering Q8, Q7 (Social) & Q3 (Science)

Students have performed good in Maths, average in English & Science, needs improvement in Social.

End of Case Study

Sample

Few Sample Inferences
from DeepGrade

Q-5, 98% students scored marks based on content and format but noticed difficulty in sentence construction and spelling.

10% students who scored less than 70% marks had difficulty in Letter Writing & Modals.

Q-3 there was a misunderstanding of the question text, some of the students answered as Covet award from the given passage but the actual answer is related to the lesson content.

Students found it difficult to answer Q-6 (Modals), most of the students did not follow any pattern which means students tried to answer based on conceptual understanding.

Q-1 - 80% reciprocated the answer key content with their own words correctly. Hence proves the better understanding of lesson Nelson Mandela.

Q-7 -Power Sharing question: Most students didn't cover the content given in the class work as well. 50 % students had a different point also which was not given in answering.

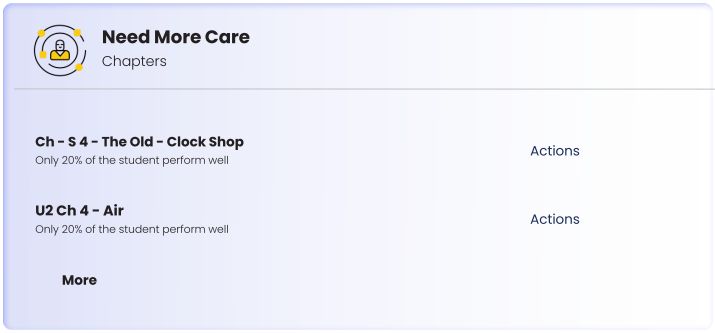
There were students who responded with 1 line answer for a 3 mark question with correct answer. This resembles the concept is well understood but written response might be harder for those students.

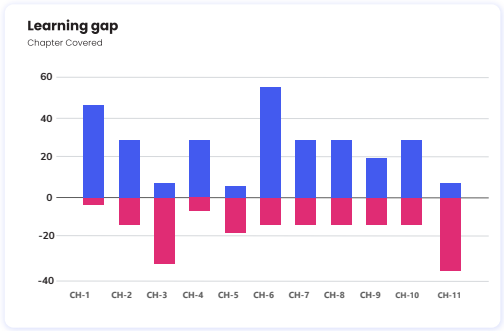
Most Students written one point from answer key and explained the same in Q. 8 - where they should've written more than 3 points to explain growth after First world war.

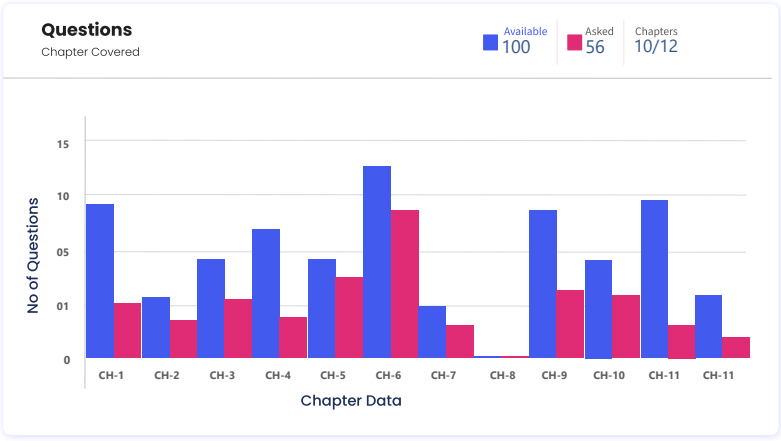
Sample

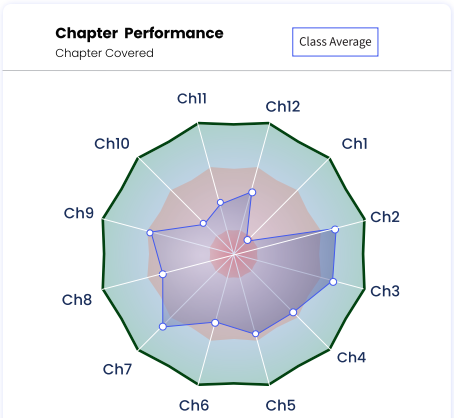
Insightful Reports
from DeepGrade

Chapter Wise Student Performance

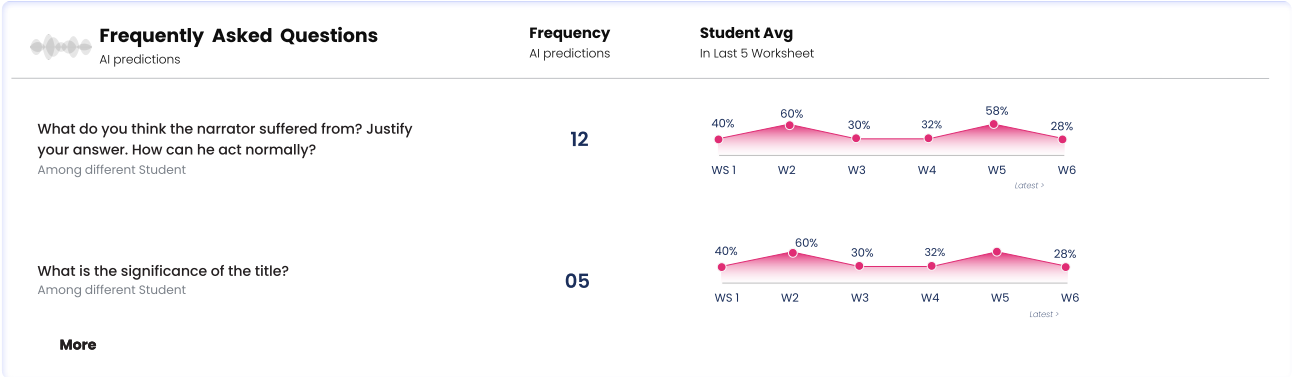






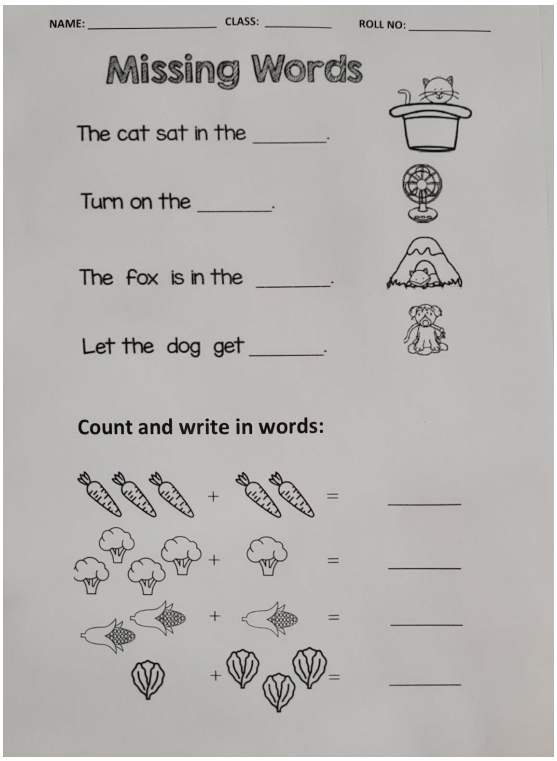


Question Wise Student Analysis



And More

Inline Answer Papers


NAME: _____ CLASS: _____ ROLL NO: _____

Missing Words

The cat sat in the _____.

Turn on the _____.

The fox is in the _____.

Let the dog get _____.

Count and write in words:

For K-12 classes

Now we can evaluate any practice worksheets or exam answer papers for primary class with DeepGrade.

Inline worksheets are sheets where students write answers on the same question paper. This can be applied to K-12 classes and many other places based on the assessment type.

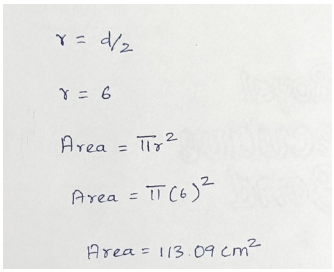
- DeepGrade extracts the children and adolescent handwritten text then evaluates the content with AI.
- These inline worksheets include exercise based questions and also descriptive responses.
- Answer text position can differ for every question type in the In-line worksheet which can be identified and graded.

NEP 5.16

School Principals and school complex leaders will have similar modular leadership/management workshops and online development opportunities and platforms to continuously improve their own leadership and management skills, and so that they too may share best practices with each other. Such leaders will also be expected to participate in 50 hours or more of CPD modules per year, covering leadership and management, as well as content and pedagogy with a focus on preparing and implementing pedagogical plans based on competency-based education.

National Education policy, India - 2020

Mathematical Grading



Mathematical

r = d/2
r = 6
Area = πr^2
Area = $\pi(6)^2$
Area = 113.09 cm^2

Extracted Text

Given the diameter of a circle D = 12 cm - Find the area of the circle?

Ch 10 Circles | Apply | Math | 3 | Answer Key | Tags

Step	LHS	RHS	Unit	Absolute Answer	Formula	Compulsory	Mark
1	r	d / 2	cm^2				0.5
2	r	6	Select Unit				
3	Area	πr^2	Select Unit				1.5
4	Area	$\pi(6)^2$	Select Unit				
5	Area	113.09	cm^2				1

+

- There could be more than one way to solve a problem.
- Students could skip a step and still get the right answer.
- Make step errors but still get the answer right.

Grading mathematics for various topics algebra, mensuration, trignomentry and more is definitely a challenge that we took head on. We allow deep configuration of answer key with various details like LHS/RHS details, absolute answer, is it a compulsory step and more.This has allowed us to grade with utmost accuracy and get various analytics.

Grading Chemical Equations

Student Answer

Extracted Answer

$2KCl\,O_3$ ----> $2\,KCl + 3O_2$

Answer Key

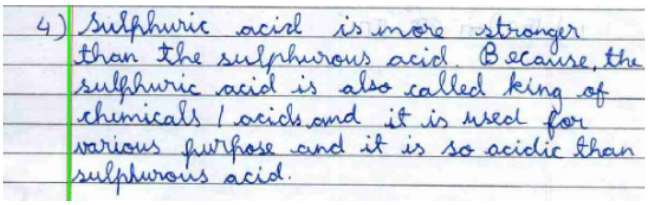
Obtained Mark 1/1

Covered Points

$2KClO_3$ ---> $2KCl + 3O_2$

Grammar Error Identification

Student Answer



Extracted Answer

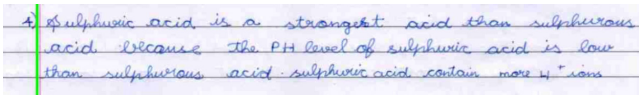
Sulphuric acid is more stronger than the sulphurous acid Because, the sulphuric acid is also called king of chemicals / acids and it is used for various purpose and it is so acidic than sulphurous acid.

AI Suggested Grammar errors

Grammar

Use only "stronger" (without 'more') when you use the comparative. | stronger

Student Answer



Extracted Answer

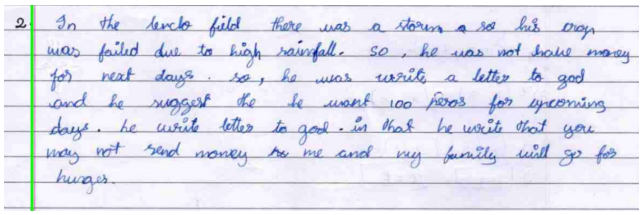
Sulphuric acid is a strongest acid than sulphurous acid because the PH level of sulphuric acid is low than sulphurous acid sulphuric acid contain more 4 ions

AI Suggested Grammar errors

Grammar

Use "the" with the superlative.	the
Use "acider" to make a comparison with this adjective.	acider
Use "lower" to make a comparison with this adjective.	lower

Student Answer


2. In the lencho field there was a storm so his crop was failed due to high rainfall. so, he was not have money for next days. so, he was write a letter to god and he suggest the he want 100 peros for upcoming days. he write letter to god. in that he write that you may not send money me and my family will go for hunger.

Extracted Answer

In the lencho field there was a storm so his crop was failed due to high rainfall, so, he was not have money for next days so, he was write a letter to god and he suggest the he want 100 peros for upcoming days. he write letter to god in that he write that you may not send money me and my family will go for hunger.

AI Suggested Grammar errors

Grammar

This sentence does not start with an uppercase letter	So
Consider using a past participle here: "had".	had
Consider using a past participle here: "written".	written
Use a comma before 'and' if it connects two independent clauses (unless they are closely connected and short).	god, and
The pronoun 'he' is usually used with a third-person or a past tense verb: "suggests", "suggested".	suggests
Possible typo. Did you mean "the" or "he"?	the
The pronoun 'he' is usually used with a third-person or a past tense verb: "wants", "wanted".	wants
This sentence does not start with an uppercase letter	He
The pronoun 'he' is usually used with a third-person or a past tense verb: "writes", "wrote".	writes
Statistics suggests that 'on' might be the correct word here. Please check.	on

AND MORE

Spelling correction in DeepGrade

AI Suggested spelling errors

Extracted | Student Answer

Sulphuric acid is stronger than sulphrous acid because of more amount of H+ ions present in the solution

Spell Check | sulphurous

Extracted | Student Answer

sulphuric asid is stronger because It has more & H+ ions at while as sulphorous acid will contain less H+ ions.

Spell Check | acid | sulphurous

Extracted | Student Answer

Power sharing is a system of government in which Power is distributed among different organs of the government like legislative Executive and judicisary.

Spell Check | judiciary

Extracted | Student Answer

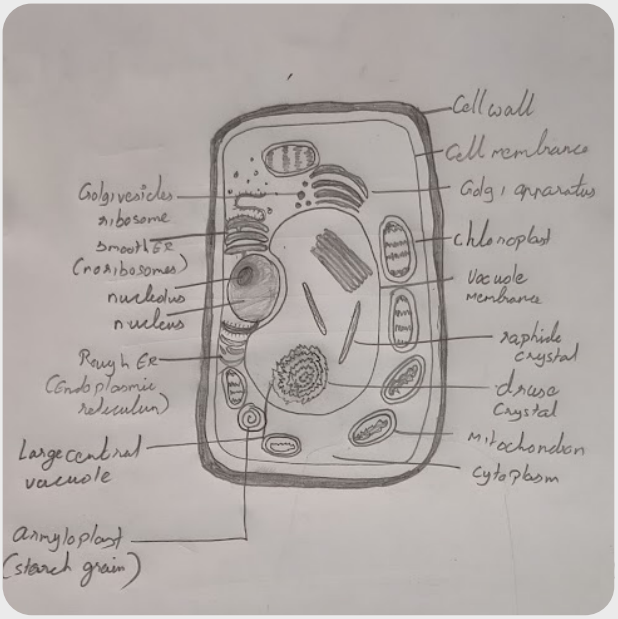
A system of government in which power is divided among the subordinate units from the central government. Here the power is shared among the organs of the government that's legisative, excetive and Judiciary and also between the levels of government.

Spell Check | legislature | executive

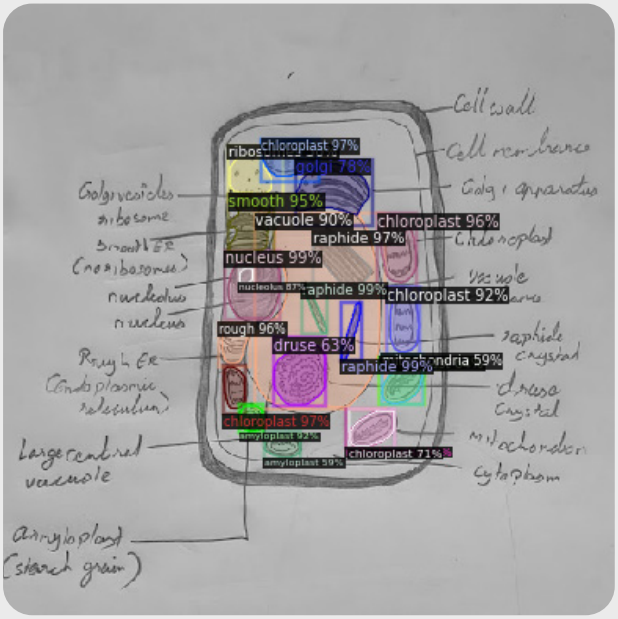
Upcoming

Diagram Correction

Original Image

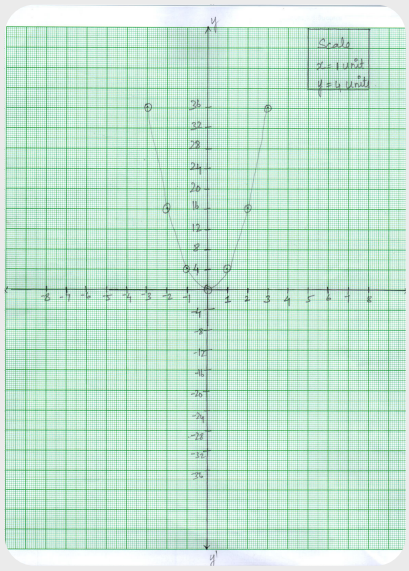


Graded Image

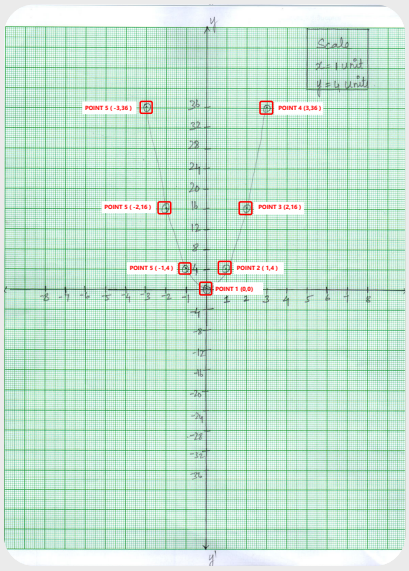


Graph Correction

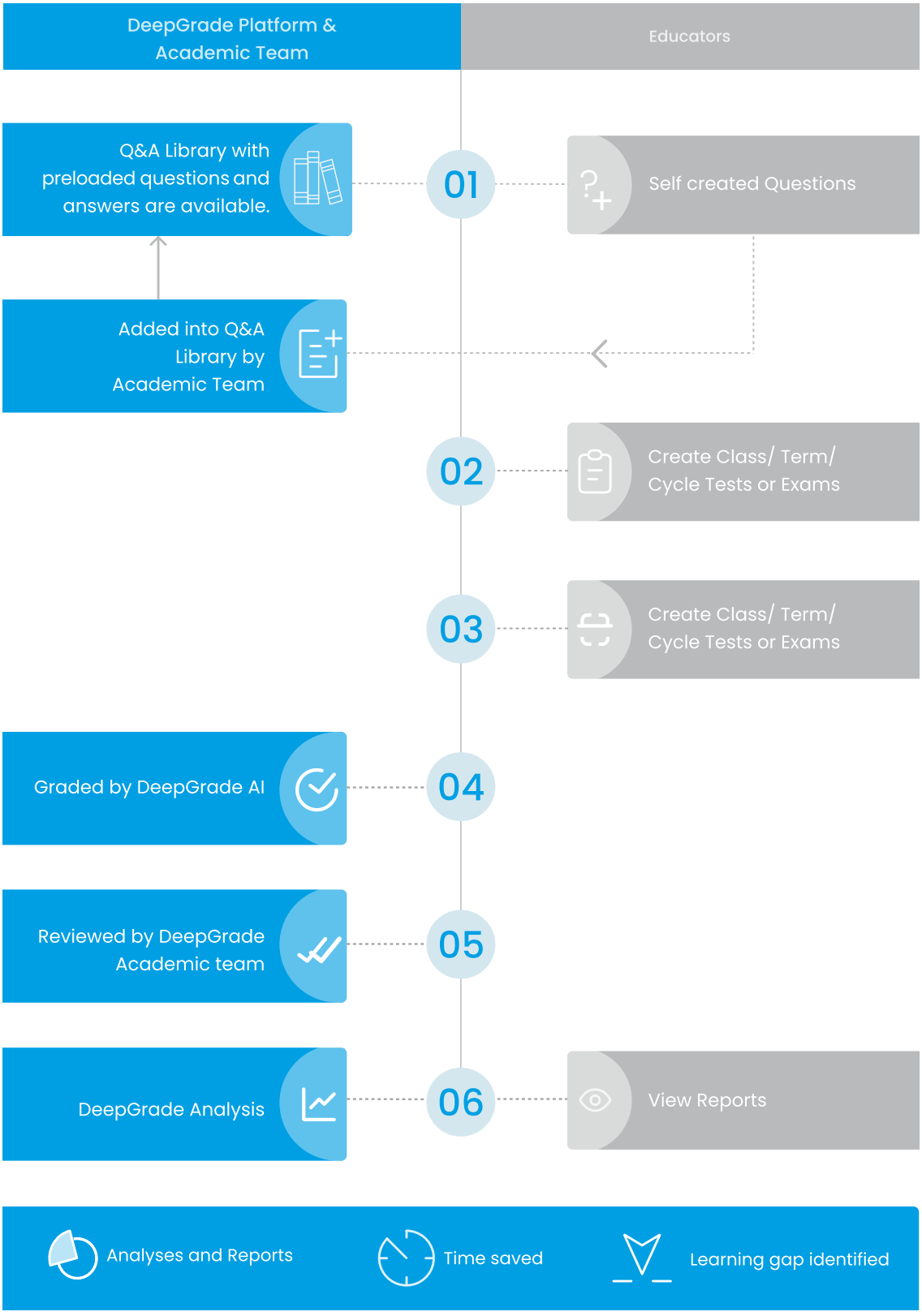
Original Image



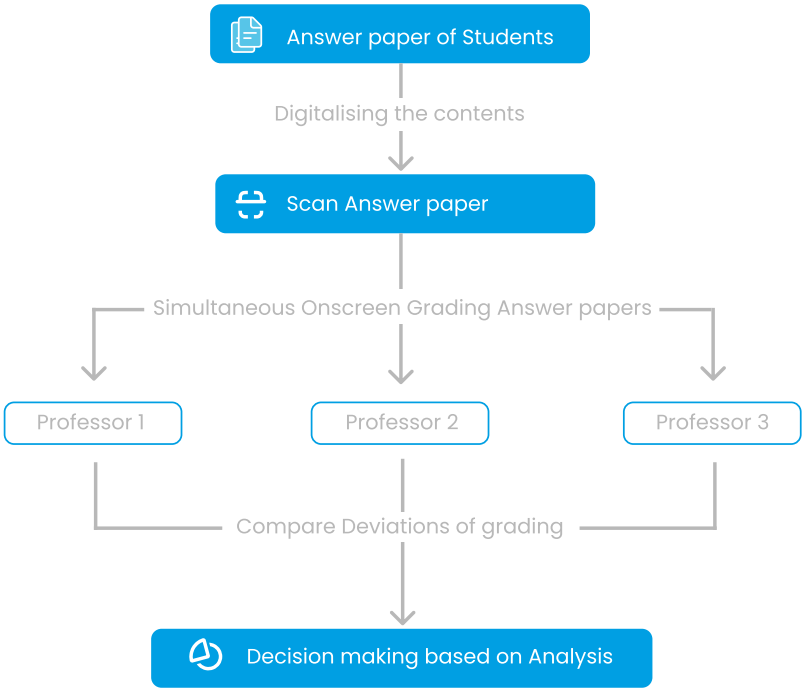
Graded Image



K-12 Process Flow



University Use Cases



Diagnostics tests

DeepGrade could be very well used to conduct high quality and high scale diagnostics tests across different departments and colleges at low cost and faster pace to ascertain key learning parameters of students. This could span across subjects and divisions.

On Screen Grading Re-visioned

Due to DeepGrade's cutting edge answer dissection process. An answer to a question of all the 100 students could be seen and graded in a single shot, bringing in the much needed move away from student by student grading.

Automated Grading for Competitive exams Training

Though MCQ drive the way in competitive exams, it is a game of time.The ability of the student to tackle time determines his success and failure. DeepGrade could be used to ascertain if the student chose the optimum methods to derive at results thus determining not only the correct method but also the most efficient method in finding the solution.

Benefits

For Institute Management

- Fairness - Fair means to assess and share real learning gaps to all learners irrespective of urban/rural
- More Accurate grading of homeworks - tests - exams by AI, easily reviewed by teachers.
- Accountability and Traceability - AI Grading solution brings in better traceability and clear insights to Teachers, Principals and quality measurement across the state.
- Better and easier remedial programs could be initiated for the students based on data and insights.
- Gradually improves the overall quality of schools with data analysis over a period of time

For Teachers / Professors

- Immediate measurement of learning gaps of students - no need to wait for cycle test or exams.
- Time saved in correction can be utilised more for class room interactions.
- Data and analysis which makes daily classroom interactions more effective.
- Self realisation and improvement in teaching methodologies - data driven continuous improvement.

For Students

- Get feedback - DeepGrade is more than marks.
- See and learn pinpointed analysis each and every question and answer.
- More interaction time with teachers.
- Need not carry heavy notebooks back and forth.

For Parents

- Get AI insights into their child's academic performance.
- Get performance analysis beyond marks.
- At par with private schools interms of quality measurement
- Active involvement in students learning process

Features Of DeepGrade

AI Grading

- Correction Using Context & Intent
- Easy to Configure
- Ability to grade student handwritten answer sheets
- Subject Focused Grading
- **Upcoming** Grading - Graphs, Maps, Diagram, Geometry

Deep Reports

- Student, Class, Section, Subject Wise Reports
- Worksheet & Question Wise Reports
- Management Report
- Teacher Wise Report
- **Performance wise Report**

Question Library

- Massive no of question under each category
- Consist of both Objective & Subjective questions
- Answer Key & Scoring Schema configured to do AI Grading
- Customizable repository as per tutor's need.
- Helps you create & grade Homework / Assessment in mi**nutes**

NEP 5.15

Teachers will be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their professions. These will be offered in multiple modes, including in the form of local, regional, state, national, and international workshops as well as online teacher development modules. Platforms (especially online platforms) will be developed so that teachers may share ideas and best practices. Each teacher will be expected to participate in at least 50 hours of CPD opportunities every year for their own professional development, driven by their own interests. CPD opportunities will, in particular, systematically cover the latest pedagogies regarding foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning, arts-integrated, sports-integrated, and storytelling-based approaches, etc.

National Education policy, India - 2020

Our Events

THE SCHOOL EDU EXCELLENCE SUMMIT & AWARDS – 2021 | BANGALORE

A successful event with **150+ education leaders** of India Edu Excellence Summit 2021.

Schools with exceptional achievements were awarded with 8 categories by CED foundation, Bangalore Sahodaya School Complex Association in collaboration with Smartail.
We are overwhelmed with all the support and interest towards DeepGrade. We would like to thank all the inquisitive school leaders who spent time listening to our DeepGrade Assessment Demo and took this forward.

Brainstorming in Hyderabad

DeepGrade AI introduced today in Smartail board room event in hyd Radisson Banjarra hills to eminent academedecians and educationist in Telangana region.

Brainstorming in Coimbatore.

First Smartail event in Coimbatore. Meeting academicians and educationist and Introducing DeepGrade AI and it's capabilities along with some interesting case studies.

SMARTAIL EVENT DELHI

DeepGrade AI introduced to school leaders and academicians in Delhi Today. We had a very good interactive discussion on Inclusivity aspects as well.

GLOBAL EDUCATION SUMMIT 2021 IN RADISSON GURGAON.

We launched Chemistry Grading using DeepGrade AI in Centre for Educational Development (CED Foundation) event Global Education Summit 2021 in Radisson Gurgaon.
We thank Dr. Priyadarshi Nayak for the support and opportunity.
Thanks to educational institutions which are using DeepGrade AI.

Nunnarrangu 2021

Nunnarrangu is a innovative event from #Tamilnadu e-governance dept and IT department on Artificial Intelligence and Data Science. We Introduced Deepgrade to distinct dignitaries and Tech leaders

Brainstorming in Dehradun

On 21st Nov 2021, there was a wonderful session on Artificial intelligence by Smartail in association with CED FOUNDATION in Hotel Pacific, Dehradun. The event was graced by Dr. Ranbir Singh Ji (CBSE Regional Officer Bengaluru), DR. PRIYADARSHI NAYAK (Founder CED Foundation) and attended by prominent educationalists from Dehradun and uttarakhand state.Artificial Intelligence product of Smartail "DeepGrade" was demonstrated to the leaders and there was a brilliant brainstorming discussion about the advent of AI in the education sector. There was also a launch of "Mathematical Grading " at the event in the presence of shri Dr Ranbir Singh (Regional Officer - Bengaluru).
The event was a great success with lot of learnings and discussions.

THE EDUCATION EXCELLENCE SUMMIT & AWARDS **(EES - 2021)**

The Education Excellence Summit & Awards (EES - 2021) organized by Smartail on 6th Feb 2021 identified individuals and educational institutions that contributed to the best educational progress of our nation and awarded them. Many schools from Tamil Nadu, Telungana and Andhra Pradesh have participated in the summit and acknowledged the vision towards creating a better world tommorrow

Accolades and Recognitions

AI GAMECHANGER 2022 Award in Education Category

NASSCOM introduced AI Gamechangers program to promote and encourage AI adoption in India, recognizing innovative and impactful ideas. AI Gamechangers 2022 with the theme "Realizing India's AI Promise" recognizes impactful and scalable AI Innovations from grass roots to large enterprises.

Part of NASSCOM DeepTech Club (DTC) program

AI Gamechangers 2022 with the theme "Realizing India's AI Promise" recognizes impactful and scalable AI Innovations from grass roots to large enterprises.

Recognized as reinventing the education sector with AI Startup – Startupindia.

INDIAai is the National AI Portal of India - a central hub for everything AI in India and beyond. A joint initiative of MeitY, NeGD and NASSCOM, the website aims to be the trusted content powerhouse in the backdrop of India's journey to global prominence in Artificial Intelligence.

Redefining the Education System via Analysis based Learning

CIO Insider is a unique platform that connects the best-in-class technology product and solution providers to the senior technology and business decision-makers and key influencer's for enterprise software-related information, resources and best practices.

NASSCOM
AI
Gamechangers
2022
AI GAMECHANGERS 2022
REALIZING INDIA'S AI PROMISE
A COMPENDIUM OF AI INNOVATION STORIES
INNOVATION PARTNER
Microsoft
ACADEMIC PARTNER
GOLD PARTNER
EY
Building a better working world

EDUCATION
GAMECHANGER

Smartail Private Limited: AI Grading of handwritten descriptive responses

- **Computer Vision**

India has always been known for its bright minds and scholars across the globe. Indian education has been applauded on several occasions. Education is rightly called the door to a better future.

COVID-19 taught us how we need to create an education system that is not confined to the school classrooms. Teaching and learnings needs a new dimension with the help of technology. This amalgamation of technology and education is changing the education landscape.

One such EdTech startup, Smartail Pvt Ltd, was incorporated in Nov 2019 in Bangalore. The passionate team of industry experts from software development domain and academia at Smartail are working to solve the real pain points of education community with respect to assessment, grading and learning gaps with the help of Artificial Intelligence.

On an average 3 out of 5 educators/teachers clock 50+ hours a week, 30-40% of their time is spent on assessment planning, evaluation, grading, feedback and resulting in reduced time towards direct interaction with students. This leads to an impact on overall teaching-learning process, quality, remedial on learning gaps and pedagogical decision-making.

> Though there have been huge advancements everywhere. The methodology that has been adopted in the school sector hasn't changed much despite the multitude of content that is available in the market. Our aim is to deliver the power of Decision science to educators through Artificial intelligence. We intend to provide them with never-before-seen data and insights to educators so that they can make data driven decisions.
>
> **Swaminathan Ganesan**
> Co-Founder & CEO, Smartail Private Limited

AI in Smartails

Smartails' DeepGrade is an AI based global product that streamlines learning, pedagogical decision making, assessment, grading, and feedback for educational institutions. DeepGrade's USP is that it is a blend of technologies such as CV, Deep Learning, NLP and is capable of grading handwritten descriptive answers/content/student responses. The software is one of its kinds which claims to be a pioneer in young adult handwriting recognition.

The solution provides deep insights into real learnings gaps, understanding pin-pointed gaps and conceptual gaps along with spelling, grammatical errors from what is being taught by the educator to both educator and learner. Additionally, it also helps plan remedial

> Deepgrade app is very useful to our teachers, we are able to easily understand what students need now using this app. Moreover, students also use this app and find it easy to connect with us like doing homeworking and checking results.
>
> **Arul Kanmani T**
> Science - Teacher Maranna Gowder Matriculation School, Coimbatore-1, Tamil Nadu

actions, upskilling and overall quality improvement with the help of AI.

Swaminathan Ganesan, Co-founder and Chief Executive Officer of Smartail, is a solution based technology specialist and a product leader. He is the architect of the product's strategic direction and is leading Smartail through the transformation that is defining a new era in the Education industry with AI.

Aslam Sherieff Jahir Basha is the Co-Founder and Chief Growth Officer of Smartail, who is working towards the increased product adoption and overall revenue growth in the Global Market.

Kannan Ganesan, Chief Technology Officer of Smartail, is a solutions architect specialized in leading the practice and introducing design, describing, and managing the solution engineering in relation to specific business problems in the IT industry.

DeepGrade can evaluate both handwritten and digital content. It also allows you to create your question repository more efficiently. The intelligently crafted scoring schema will enable near human grading of student content.

The solution is crafted by keeping both the teachers and students in mind and it allows students to submit their homework, assignments, worksheets even from their smart phones. The product brings the power of AI in improving daily classroom studying, teaching, exam, test, and home work. This allows teachers a window for quality time spent with students in better concept clearing and student interactions.

Natural language Processing (NLP) powered context grading methodology of DeepGrade evaluates each content for its intent, meaning, similarity and many such parameters to provide near human accuracy in

> Deepgrade gives a unique identity to our teaching. It supports teachers in every way like sharing auto gradable homework, AI Grading for exams and more.
>
> **D. Azhaghu Prabha**
> B.Sc., B.Ed., Mathematics -Teacher Maranna Gowder Matriculation School, Coimbatore-1, Tamil Nadu

content Grading.

Smartail's vision

Smartail believes that "One size fits all" methodology in teaching is gone and we need to understand that each student is skilled in different subject areas. Traditional way of teaching and assessment with no insights about students doesn't bring out the real strength of students. AI assisted assessments help teachers, students and administrators to bring out the best in students, thus taking the overall quality of education to a new different level.

With DeepGrade's learning assessment module, one can diagnose the results of the teachings with assessment. This provides the ability to measure concept understanding and identify learning gaps to improve learning.

The startup recently got selected for #RevvUpcohort2 startup acceleration program by the Telangana AI Mission (T-AIM) & NASSCOM AI mission.

The solution is already under trial in 70+ schools with 16+ paying customers. The product has been implemented as a pan India product, urban and rural in Tier1 and Tier 3 towns and is looking to gain traction and momentum in international market for early adoption (CBSE Schools – Middle East).

AI has taken the Education Sector to a new level where it adds immense value by providing deep insights about Teachers' teaching methodology, Students' learning methodology, identifies learning gaps fast and accurately, helps administrators in efficiently managing their tasks and much more.

The nation needs more scholars who can compete at global levels, requiring top-notch and innovative teaching and learning methodologies. The learning process will be enriching and exciting with such initiatives and increasing awareness.

Get Empowered

www.smartail.ai

reachus@smartail.ai | **+91 - 9019404915**