



Formative Rückmeldungen und adaptive Materialien im Fach Englisch

KI für reale Herausforderungen der Schule

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und das ICALL-Research.de Team

Fachtagung “KI Chancen und Herausforderungen für Schule und Unterricht”

Berlin, 30. November 2018



KI-Methoden für den Fremdsprachenerwerb

- Ziel: Innovative Anwendungen, die
 - reale Herausforderungen der Schule lösen, und dabei
 - etablierte Mechanismen des Zweitspracherwerbs nutzen.
- Welche KI Methoden?
 - Automatische Analyse von **Sprache**
 - Modellierung individueller **Lerner** (Kompetenzen)
 - Modellierung von **Aufgaben** (Komplexität)
- Was ist damit zu erreichen?
 - **Interaktivität**: Schüler beim Lernen individuell fördern
 - ⇒ Intelligentes Arbeitsheft FEEDBOOK (<http://feedbook.schule>)
 - **Adaptivität**: Materialien & Aufgabenschwierigkeit an Lerner anpassen
 - ⇒ Sprachaffine Suchmaschine FLAIR (<http://flair.schule>)
 - ⇒ Lerneradaptive Lesematerialien SYB (<http://complexity.schule>)



Interaktivität

- SchülerInnen brauchen für den Fremdspracherwerb
 - Feedback zu Form und Funktion von Sprache
 - Aufgaben auf passendem Niveau
- große Unterschiede zwischen Schülern
 - in der Klasse: Binnendifferenzierung, kaum Zeit für individuelles Feedback
 - zu Hause: Aufgaben oft zu leicht/schwer, Feedback elternabhängig

⇒ FeedBook: Intelligentes Arbeitsheft für die 7. Klasse Englisch

Grundlage: Arbeitsheft *Camden Town* (Diesterweg, DFG Transferprojekt)

- + unterstützt Schüler durch sofortiges, individuelles Feedback
- + automatische Binnendifferenzierung durch Lernermodell



B 2 Gillian's point of view

Complete this version of the story from Gillian's point of view. Use the following verbs and put them in the simple past.

• LiF1Rc: Simple past

begin · come · feel · get · give · go · lie · make · not be · not listen · put · say · sit · suggest · try



Support

Irregular verbs:

Textbook p. 255

.....

Mum's boyfriend was coming to meet me so of course I got ✓ ? up in a bad mood. But Mum gave ✓ ? me a great big smile. She made ✓ ? me my favourite pancakes with maple syrup for breakfast but I wasn't ✓ ? hungry. She tried ? to cheer me up and _____ ? that we go shopping. That usually puts me in a good mood but not today. So I _____ ? something about homework and _____ ? into my room. I _____ ? down on my bed and _____ ? really sorry for myself. Just then Mum _____ ? in. She



B2 Gillian's point of view

Complete this version of the story from Gillian's point of view. Use the following verbs and put them in the simple past.

• LiF1Rc: Simple past

begin · come · feel · get · give · go · lie · make · not be · not listen · put · say · sit · suggest · try



Support *****

Irregular verbs:

Textbook p. 255

Mum's boyfriend was coming to meet me so of course I got up in a bad mood. But Mum gave me a great big smile. She made me my favourite pancakes with fruit. I was hungry. She tried to help me but I didn't want to go shopping. That usually puts me in a good mood. I went into my room. I lay down on my bed and thought about my homework and felt really sorry for myself. Just then Mum came in. She

Feedback für "tried"

When an infinitive ends in 'consonant + y', we change the 'y' to 'i' in the simple past.



Hilfreich?

☐ Ja ☐ Nein

OK



B1 Off to Greece again

Mr Lambraki is checking flights to Greece. Read the information he has found on the two airlines and use the adjectives below to compare them.

• LiFBR: Comparison of adjectives

expensive (ticket) · early (departure) · attractive (shopping on board) · good (choice of food offered on board) · healthy (food and drinks) · suitable (airport) · cheap (tickets for shuttle bus) · friendly (service on board) · easy (online booking)

Midair	Air-Con
- London – Athens from 39 pounds - departure 7.00 am - non-stop - small choice of duty free articles for shopping on board - low-calorie and vegetarian food available¹ - from Gatwick only 28 miles from London - tickets for shuttle bus are 10 euros	- London – Athens from 57 pounds - departure 12.15 pm - via Berlin - all international brands for shopping on board - snacks: crisps and chocolate bars - from Stansted only 40 miles from London - tickets for shuttle bus are 10 euros

1.

The tickets at Air-Con are expensiver than at Midair.

2.



B1 Off to Greece again

Mr Lambraki is checking flights to Greece. Read the information he has found on the two airlines and use the adjectives below to compare them.

• LiF8R: Comparison of adjectives

expensive (ticket) · early (departure) · attractive (shopping on board) · good (choice of food offered on board) · healthy (food and drinks) · suitable (airport) · cheap (tickets for shuttle bus) · friendly (service on board) · easy (online booking)

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Feedback für "The tickets at Air-Con are expensiv..."

When an adjective has three or more syllables, we form the comparative with 'more' and the superlative with 'most'.



Hilfreich?

☐ Ja ☐ Nein

OK

1.

The tickets at Air-Con are expensiver than at Midair.

2.



B1 Off to Greece again

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Feedback für "The tickets at Air-Con are expensiv..."

When an adjective has three or more syllables, we form the comparative with 'more' and the superlative with 'most'.

The tickets at Air-Con are **expensiver** than at Midair.



Hilfreich?

☐ Ja

☐ Nein

OK

1.

*The tickets at Air-Con are **expensiver** than at Midair.*

2.

3.



CYP 3 Reading check: How kayaking changed my life

James is a student at St David's College. Read his report and answer the questions below.

A long, long time ago, I arrived at St David's College ... this is my story...

I wasn't very confident when I first arrived. But I soon found myself in a kayak on the Llangollen canal (...). That was the day kayaking became my life: something I enjoyed, an activity I knew would build my confidence.

I started going to kayaking sessions at weekends and every Wednesday; I loved every minute! I also tried other activities like climbing, mountain biking and sailing. I also tried hill walking but that was rubbish!!!! I started to get really good at kayaking and the outdoor ed teachers¹ helped me develop² lots of new skills³.

I have been lucky enough to go on many expeditions; my first one was in year 10, when I went to Sweden. We sea-kayaked around Tjorn Island (...), and it was an amazing experience which I will never forget.

The same year I went on the Alaska trip (...). The expedition was cold but I still had a really good time. I caught my first fish. Afterwards we ate it, yum!!!! We kayaked past glaciers⁴ and saw bears⁵ and other animals. My kayaking skills and strength⁷ were improving, as well as my confidence.

In year 11 I went to Scotland to try white water⁸ kayaking, (...) and went down some fantastic rivers. During the expedition I did my first river Eskimo roll⁹. (...) This was a very big moment for me as it greatly helped my confidence in the

kayak and after that I got really good.

At the end of year 11 Ian Lloyd Jones suggested that I could do this as a career¹⁰. From that moment I knew it was all I wanted to do.

In the lower 6th I signed up¹¹ for (...) an outdoor apprenticeship¹². (...) I got the opportunity to work with all the year groups on their outdoor ed days and join¹³ them on some expeditions; this has been life changing and great fun.

(...)

I also did a very wet year 6 Snowdonia expedition, which was fun until my tent got flooded!¹⁴ There was so much water in my tent, I'm sure I could have kayaked in it!!! (...) I'm now a qualified kayaking instructor myself, which is great!!! (...) I am leaving St David's College early to go and work with Acorn Adventure in France, teaching kids to canoe¹⁵. This is what I have wanted for a long time and is the start of my own outdoor ed career.

Thank you St David's for changing my life.

James Oram

¹ outdoor ed teachers – Sportlehrer für Aktivitäten im Freien (z.B. Kajakfahren etc.)

² develop – erarbeiten

³ skills – Fertigkeiten

⁴ yum – lecker

⁵ glacier – Gletscher

⁶ bear – Bär

⁷ strength – Stärke

⁸ white water – Wildwasser

⁹ Eskimo roll – Eskimorolle (man dreht sich mit dem Kajak so, dass man zeitweise ganz unter Wasser ist)

¹⁰ career – Beruf

¹¹ sign up – zu etw anmelden

¹² apprenticeship – Ausbildung

¹³ join – begleiten

¹⁴ flooded – überflutet

¹⁵ canoe – Kanufahren



1. How did James feel when he first came to St David's?

James was a student.



CYP3 Reading check: How kayaking changed my life

James is a student at St David's College. Read his report and answer the questions below.

A long, long time ago, I arrived at St David's College ... this is my story...

I wasn't very confident when I first arrived. But I soon found myself in a kayak on the Llangollen canal (...). That was the day kayaking became my life: something I enjoyed, an activity I knew would build my confidence.

I started going to kayaking sessions at weekends and every Wednesday; I loved every minute! I also tried other activities like climbing, mountain biking and sailing. I also tried hill walking but that was rubbish!!!! I started to get really good at kayaking and the outdoor ed teachers² helped me develop² lots of new skills³.

I have been lucky enough to go on many expeditions; my first one was in year 10, when I went to Sweden. We sea-kayaked around Tjorn Island (...), and it was an amazing experience which I will never forget.

The same year I went on the Alaska trip (...). The expedition was cold but I still had a really good time. I caught my first fish. Afterwards we ate it, yum!!!! We kayaked past glaciers⁴ and other animals. My kayaking strength⁷ were improving, as confidence.

In year 11 I went to Scotland to kayaking, (...) and went down rivers. During the expedition I did Eskimo roll⁵. (...) This was a very big me as it greatly helped my confidence.

kayak and after that I got really good.

At the end of year 11 Ian Lloyd Jones suggested that I could do this as a career⁶. From that moment I knew it was all I wanted to do.

In the lower 6th I signed up¹¹ for (...) an outdoor apprenticeship¹². (...) I got the opportunity to work with all the year groups on their outdoor ed days and join¹³ them on some expeditions; this has been life changing and great fun.

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I also did a very wet year 6 Snowdonia expedition, which was fun until my tent got flooded¹⁴. There was so much water in my tent, I'm sure I could have kayaked in it!!! (...) I'm now a qualified kayaking instructor myself, which is great!!!! (...) I am leaving St David's College early to go and work with Acorn Adventure in France, teaching kids to canoe¹⁵. This is what I have wanted for a long time and is the start of my own outdoor ed career.

Thank you St David's for changing my life.
James Oram



Feedback für "James was a student."

There seems to be important information missing in your answer. Please have a look at the highlighted passage in the text.



Hilfreich?

☐ Ja ☐ Nein

OK

1. How did James feel when he first came to St David's?

James was a student.







Was leistet die KI im FeedBook?

- Im Gegensatz zu bislang verfügbaren Systemen für Englisch, liefert das FeedBook vielfältiges, individuelles Feedback.
 - “Scaffolding”, das den Schüler schrittweise zur Lösung führt.
- Automatische Analyse von tausenden Fehlervarianten und korrekten Paraphrasen (statt manuelle Kodierung pro Aufgabe)
 - Abdeckung: alle Grammatikthemen des Bildungsplans 7. Klasse
 - 188 verschiedene Feedbacktypen zu tenses, comparatives, relative & reflexive pronouns, gerunds, passive, conditionals, (in)direct speech
- Außerdem: Explizite Modelle von Lernern und Aufgaben



Lernermodell: Was kann ich? Woran weiterarbeiten?

The screenshot displays the FeedBook interface for a student named Jason (Schüler). The interface shows three learning items, each with a title, accuracy, and two action buttons: 'Statistiken anzeigen' and 'Aufgaben vorschlagen'.

- Item 1 (Yellow background):**
 - Topic: was were form
 - Accuracy: [Genauigkeit: 40%]
 - Buttons: Statistiken anzeigen, Aufgaben vorschlagen
- Item 2 (Green background):**
 - Topic: reflexive verb
 - Accuracy: [Genauigkeit: 100%]
 - Buttons: Statistiken anzeigen, Aufgaben vorschlagen
- Item 3 (Red background):**
 - Topic: relative pronoun which
 - Accuracy: [Genauigkeit: 0%]
 - Buttons: Statistiken anzeigen, Aufgaben vorschlagen

Aufgabenmodellierung: Ist die Aufgabe angemessen?

C3 What was ... doing while Gillian was doing something else?

Write down what Gillian's friends were doing while she was running away from home. Use the past progressive in both parts of the sentence.

• LiF1Re: Past progressive



1. buy Arsenal tickets/sit on the bus

Charlie was buying Arsenal tickets while Gillian was sitting on the bus.



2. feed Patch/sit on the bus

George was feeding Patch while Gillian was sitting on the bus.



3. watch TV/sit on the bus



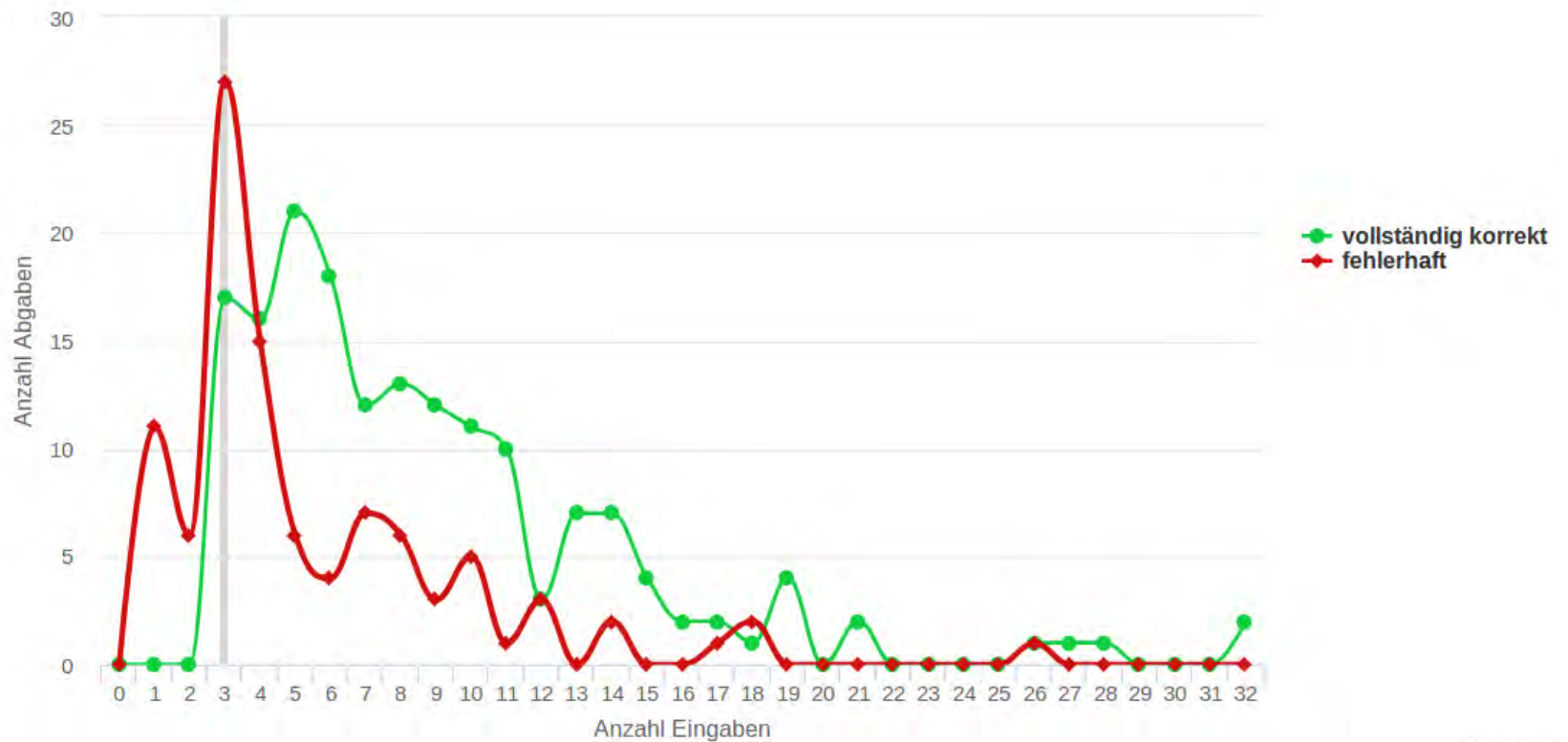


Taskperformance

Theme 1 C, SubTask 3 [short answers]

anzeigen

267 Abgaben (167 vollständig korrekt, 100 fehlerhaft)



Highcharts



FeedBook: KI für reale Schulanforderungen

- SchülerInnen
 - + können Fremdsprache durch schrittweise Rückmeldungen zu individuell passenden Aufgaben erfolgreich einüben
 - + Förderung unabhängig von Bildungsnähe des Elternhauses
 - LehrerInnen
 - + werden entlastet von Korrekturarbeit
 - + informiert durch Systemdiagnose zu Fähigkeiten & typischen Problemen
 - + können in der Klasse auf besserer gemeinsamer Basis arbeiten
- Aktuelle Studie: FeedBook ganzjährig in 15 regulären Klassen
- Evaluation des Lernerfolgs, des Feedbacks, der Aufgaben
 - Ökologisch valide Daten essentiell für Forschung & Entwicklung



Adaptivität: Welches Material für welche Schüler?

1. FLAIR: Websuche nach aktuellen Texten

- auf dem sprachlichen Niveau (A1-C2) des Schülers
- die ausgewählte Zielkonstruktionen reich repräsentieren (deckt dabei alle sprachlichen Konstruktionen des Bildungsplans Englisch ab)

2. SyB: analysiert Schülertext und bietet aktuelle Lesetexte auf dem individuell passenden nächsten Komplexitätsniveau.



←

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flair.schule

Suchen

☰

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☰

← FLAIR

🕒

🌐

50 Results (0 Filtered)

VISUALIZE 📊

SHARE SEARCH SETUP ⚙️

Text Characteristics: ☰

Length: ☐ Prefer shorter texts.

Levels:

✓ A1-A2 1 / 50

✓ B1-B2 41 / 50

✓ C1-C2 8 / 50

Constructions: ✔️

▼ Sentences ↺

▼ Parts of Speech ↺

Language Use: 📄

☐ Academic Vocabulary

✏️ ↺

'Star Wars'

1

[Star Wars - Wikipedia](https://en.wikipedia.org/wiki/Star_Wars)
https://en.wikipedia.org/wiki/Star_Wars

→ Star Wars is an American epic space opera franchise, created by George Lucas and centered around a film series that began with the eponymous 1977 movie. The saga quickly became a worldwide pop culture phenomenon. The first film was followed by two successful sequels, ...

2

[Star Wars: The Old Republic](https://www.swtor.com)
<https://www.swtor.com>

→ The statements and opinions expressed on these websites are solely those of their respective authors and do not necessarily reflect the views, nor are they endorsed by Bioware, LucasArts, and its licensors do not guarantee the accuracy of, and are in no way responsible for any content on these websites, and the Star Wars: The Old Republic ...

3

[Wookieepedia | FANDOM powered by Wikia](http://starwars.wikia.com)
starwars.wikia.com

→ Star Wars movies, characters, and spin-offs are catalogued in Wookieepedia, a comprehensive database that anyone can edit.

4

[Amazon.com: star wars](https://www.amazon.com/star-wars/s?page=1&ref=caps_kc_star_wars)
https://www.amazon.com/star-wars/s?page=1&ref=caps_kc_star_wars

→ LEGO 6213564 Star Wars TM Advent Calendar, 75213, 2018 Edition, Minifigures, Small Building Toys, Christmas Countdown Calendar for Kids (307 Pieces), Multi-Color

🔍

⬆️



FLAIR

Relative 36/50

Adverbial 42/50

Real Conditional 21/50

Unreal Conditional 11/50

There is/are 20/50

'Star Wars'

- Here's How to Watch Star Wars Online | Digital Trends**
<https://www.digitaltrends.com/movies/how-to-watch-star-wars-online>
 With more Star Wars content available than ever before, fans of the franchise have a ton of ways to watch it. Few people want to deal with DVDs or Blu-ray discs anymore, though. If you want to ...
- Star Wars - Costumes - Walmart.com**
<https://www.walmart.com/c/theme/star-wars-costumes>
 Gifts & Registry Health Home Home Improvement Household Essentials Jewelry Movies Music Office
- Star Wars (film) - Wikipedia**
[https://en.wikipedia.org/wiki/Star_Wars_\(film\)](https://en.wikipedia.org/wiki/Star_Wars_(film))
 Star Wars (later retitled Star Wars: Episode IV – A New Hope) is a 1977 American epic space opera film written and directed by George Lucas. It is the first film in the original Star Wars trilogy and the beginning of the Star Wars franchise.
- Solo: A Star Wars Story (2018) - Rotten Tomatoes**
https://www.rottentomatoes.com/m/solo_a_star_wars_story
 Board the Millennium Falcon and journey to a galaxy far, far away in Solo: A Star Wars Story, an all-new adventure with the most beloved scoundrel in the galaxy. Through a series of daring ...

Here's How to Watch Star Wars Online... X

B1-B2 62 Sentence(s) 928 Word(s)

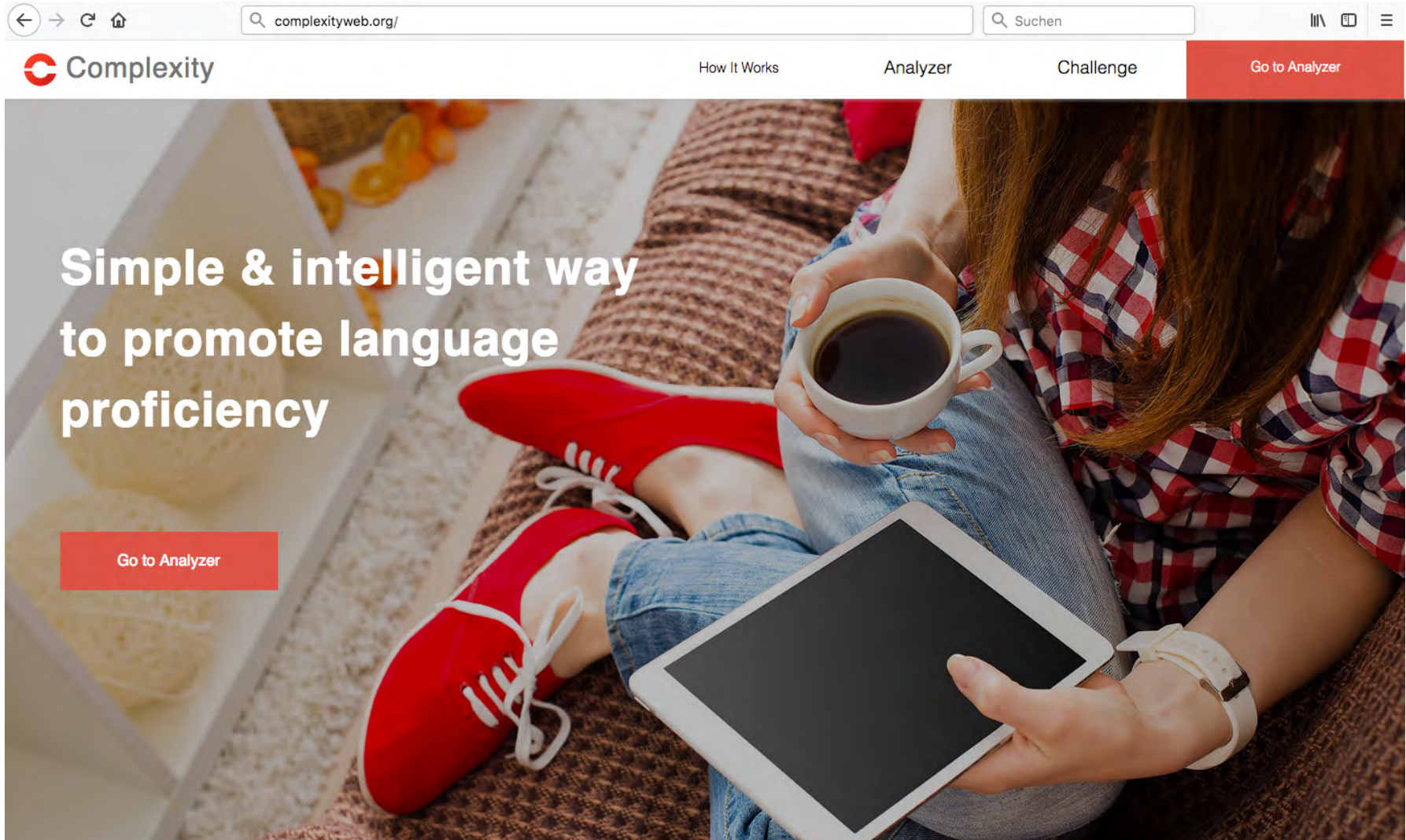
once.

If you own the films on Blu-ray or UHD Blu-ray, this isn't a problem, but what if you prefer your movies not to take up any space in your living room? It wasn't all that long ago that it was nearly impossible to watch anything with Star Wars in its name online, unless you were watching a parody video on YouTube. Fortunately, things have changed, and while you may need to look to different services depending on the movie you want to see, it's possible to watch all the Star Wars you could want using a TV and your internet connection. Let's run through your options.
 (Note: These recommendations are for U.S. residents. International availability varies by region.). Streaming via subscription.

It would be great if we could all just log into our Netflix accounts and queue up our favorite Star Wars films. Unfortunately, Disney/LucasFilm knows how valuable the franchise is, and only a few of its movies are available via the

Construction	Count	Weight
Clauses > Real conditiona...	10	(1)
Verbs > Phrasal > Phrasal...	5	(1)

ALL CONSTRUCTIONS



The screenshot shows the Complexity website. The browser address bar displays 'complexityweb.org/'. The website header includes the Complexity logo and navigation links: 'How It Works', 'Analyzer', 'Challenge', and a red 'Go to Analyzer' button. The main content area features a large image of a person sitting on a couch, holding a cup of coffee and a tablet. Overlaid on the image is the text 'Simple & intelligent way to promote language proficiency' and a red 'Go to Analyzer' button.

← → ↺ 🏠

🔍 complexityweb.org/ 🔍 Suchen

Complexity

How It Works Analyzer Challenge **Go to Analyzer**

**Simple & intelligent way
to promote language
proficiency**

Go to Analyzer



← → ↺ 🏠 complexityweb.org/ 🔍 Suchen

Complexity How It Works Analyzer Challenge **Go to Analyzer**

Your Text

How is Climate Change Measured?

Although we can't look at thermometers going back thousands of years, we do have some records that help us figure out what temperatures and concentrations were like in the distant past. For example, trees store information about the climate in the place where they live. Each year, trees grow thicker and form new rings. In warmer and wetter years, the rings are thicker. Old trees and wood can tell us about conditions hundreds or even several thousands of years ago.

Keys to the past are also buried under lakes and oceans. Pollen, creatures, and particles fall to the bottom of oceans and lakes each year, forming sediments. Sediments preserve all these bits and pieces, which contain a wealth of information about what was in the air and water when they fell. Scientists reveal this record by inserting hollow tubes into the mud to collect sediment layers going back millions of years.

Challenge **Analyze**

i This text is used to scale your proficiency on the target levels. It will be analyzed automatically to identify the aspect of your language that needs to be further improved.



← → ↺ 🏠 complexityweb.org/ 🔍 Suchen

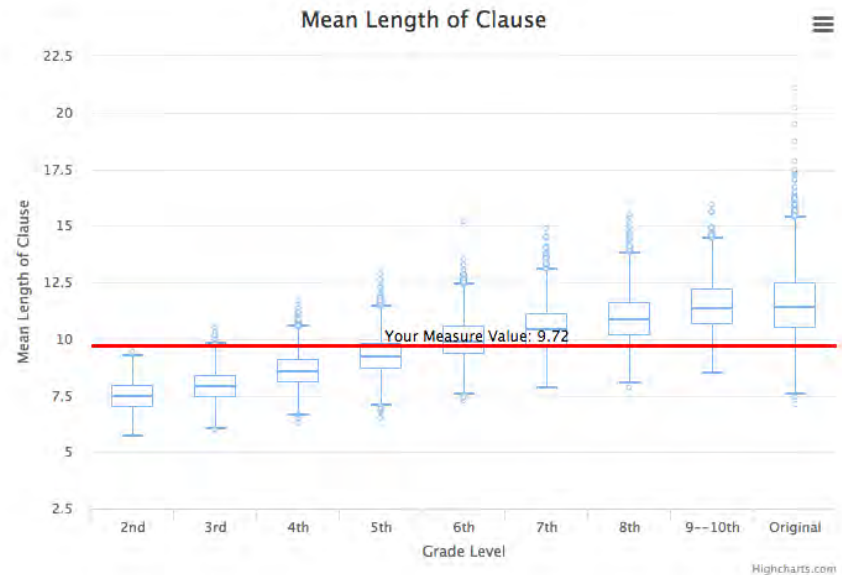
Complexity How It Works Analyzer Challenge [Go to Analyzer](#)

Your Position in Scale

Syntactic Measure:

Mean Length of Clause

Challenge





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complexityweb.org/

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Suchen

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Complexity

How It Works

Analyzer

Challenge

Go to Analyzer

Challenge Articles

All Grade Levels ▾

Challenge Level

↺



Senegalese welcome Obama as one of their own as he starts Africa trip

Target Measure: 11.64

DAKAR, Senegal - President Barack Obama arrived in this corner of West Africa to deliver messages about civil society and responsible leadership, democracy and development. Senegal's message to him was simpler: Welcome home. The greeting was plastered on signs and T-shirts wherever Obama went Thursd...

Grade Level: 9--10th



Former Great Barrier Reef marine park head calls for ban on new coal mines

Target Measure: 11.54

The former head of the Great Barrier Reef Marine Park Authority has called for a ban on all new coal mines in Australia, saying the move is needed to protect the Great Barrier Reef from climate change. ?I love the reef and I have worked to preserve it since 1979; I will oppose anything that threaten...

Grade Level: Original



World Food Prize winner fights poverty from the bottom up

Target Measure: 11.46

DES MOINES, Iowa ? The winner of the 2015 World Food Prize goes to the creator of one of the world's largest nonprofit organizations, which has helped more than 150 million people out of poverty. Fazle Hasan Abed, 79, of Bangladesh, is the creator of the Bangladesh Rural Advancement Committee (BRAC)...

Grade Level: 9--10th

17/18

http://icall-research.de

30. November 2018



KI für Englischunterricht: Zusammenfassung

- KI Methoden auf Basis etablierter Mechanismen des Zweitspracherwerbs bieten
 - Interaktivität und Feedback → FEEDBOOK
 - Adaptivität von Materialien → FLAIR, SYB
- Ziel: Reale Probleme der Schule lösen
 - gezielte individuelle Unterstützung der Schüler
 - Binnendifferenzierung ohne Mehraufwand für Lehrer
 - verbesserte Bildungsgerechtigkeit
- Bisher keine entsprechenden Systeme kommerziell verfügbar, kaum gezielte Förderung dieser Forschung & Entwicklung
 - politische Rahmensetzung und Förderprogramme zur Entwicklung interaktiver, adaptiver Systeme für effektive Digitalisierung essentiell