

INTERFACE

In-Service Training Programme and Toolkit for Validation of Skills

Part A: Building the digital pedagogic skills for VET tutors **Module A: Pedagogical approaches with focus on challenge- based learning theory**



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A Introduction

B Training phase

About the topic
**Pedagogical approaches
with focus on challenge-
based learning theory**

Small group work to the
topic
**Pedagogical approaches
with focus on challenge-
based learning theory**



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A:

Introduction to the topic **Pedagogical approaches with focus on challenge-based learning theory**



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A1: What is a pedagogical approach with focus on challenge- based learning theory?





What is **challenge-based learning**?

“Challenge-Based Learning (CBL) is a pedagogical approach that actively engages students in a situation that is real, relevant and related to their environment. Core to CBL is that learning is driven by challenging, open-ended problems that have multiple solutions. CBL builds on the foundation of experiential learning (learning by doing, surprises, and set backs). In CBL the learning process is more important than the outcome (solutions)”
VREMANN-DE OLDE ET. AL. 2021, P. 3).

VREMANN-DE OLDE, C./ VAN DER MEER, F./ VAN DER VOORT, M. ET. AL. (2021): Challege Based Learning @UT. Why, What, How. Response of Shaping Expert Group Innovation of Education to Assignment of UCOW. Twente: University of Twente.





A2: The structure of the challenge-based learning approach!



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The structure of the **challenge-based learning approach**:

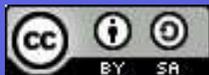
1. Engage

- Begin with a **BIG IDEA** (e.g. a theme or concept that could be explored in different ways and has an importance for the learners)
- Agree on a **FINAL QUESTION** where all participants (students, teachers, externals etc.) agree on a question to work on
- Turn the final question into a **CALL TO ACTION** where the participants learn about the subject in depth

<https://www2.tuhh.de/zll/challenged-based-learning/>



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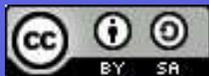
The structure of the **challenge-based learning approach**:

2. Investigate

- This phase should make shure that **all participants of the challenge contribute with their knowledge and skills** which means that they should work on a common basis for the creation of sustainable solutions
- The activities could consist of **simulations, experiments, projects, problem sets, research, and games**
- **A clear conclusions that will set the foundation for the solution** is set at the end of the phase. The conclusion consists of reports and presentations that demonstrate the learners

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The structure of the **challenge-based learning approach**:

3. Act

- In the action phase, Solutions are **developed and implemented** with an authentic audience and the results evaluated
- The partners can use the knowledge to design **new solutions** which are then **implemented and evaluated** (e.g., evaluation of a prototype)
- A **final presentation in public** offers the possibility to show differences to other solutions

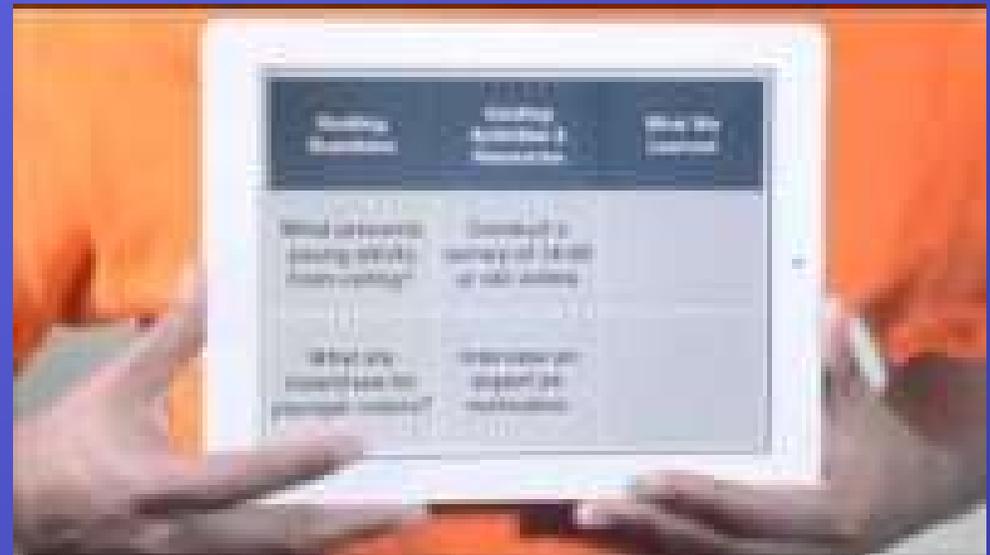
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Challenge-based learning explained



<https://youtu.be/K-YU0Ea9JKg>



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A3: Faces and formats of challenge-based learning



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Faces and formats of **challenge-based learning** :

“Challenges – whether they are called hackathons, competitions or design projects – are activities that challenge students of all levels to solve difficult problems and can serve as a powerful tool for education and engagement. They provide an incentive to advance technical and mathematical skills and enhance teamwork and effective communication, so called 21st century skills.”

There are different dimensions in which challenges occur:

- **duration and workload** – The amount of work that have to be done (e.g., ECTS or working days)
- **level of engagement** – The point of time where students starts to find a solution
- **level of investigation** – The level of research and variety of activities that are used to find a solution
- **level of action** – Opening the made solutions/finding to the society

<https://www2.tuhh.de/zll/challenged-based-learning/>

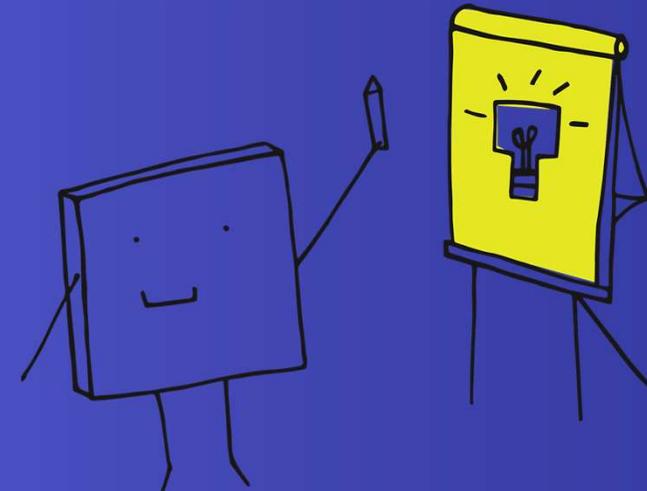




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Training phase

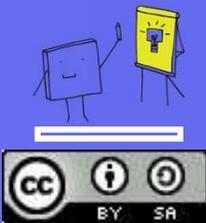
Work session in small groups



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Task 1

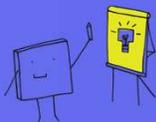
- What does CBL mean for my role as a teacher?
- You have 20 minutes.
Please, collaborate with another person.
- Afterwards, everyone should share ideas.



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Task 2

- Have a look at <https://www.challengebasedlearning.org/toolkit/> as well as <https://www.utwente.nl/en/cbl/documents/cbl-eciu-tools-and-sources-for-teamchers.pdf> and create your own 45minute lesson by using the pedagogical approach of challenge-based learning
- You have 90 minutes. Please work on your own.
- Afterwards, everyone should share the impressions on the basis what you all wrote down.



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Congratulation!

You mastered module A on
pedagogical approaches with focus on
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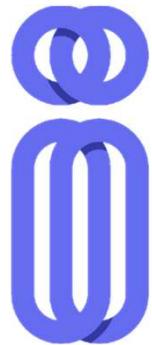
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**Fortbildungsprogramm
und Toolkit für die Validierung von Fertigkeiten**

**Teil A: Aufbau digitaler pädagogischer Fähigkeiten für
Berufsbildungstutoren**

**Modul A: Pädagogische Ansätze mit Schwerpunkt auf der
Theorie des herausforderungsorientierten Lernens**



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A Einführung

B Ausbildungsphase

Über das Thema
**Pädagogische Ansätze mit
Schwerpunkt auf der
herausforderungsbasierten
Lerntheorie**

Gruppenarbeit zum Thema
**Pädagogische Ansätze mit
Schwerpunkt auf der
Theorie des
herausfordernden Lernens**



A:

Einführung in das Thema

Pädagogische Ansätze mit

Schwerpunkt auf der

Theorie des

herausfordernden Lernens





A1: Was ist der pädagogische Ansatz mit Schwerpunkt der Theorie des herausfordernden Lernens?





Was ist **herausforderungsorientiertes Lernen**?

"Challenge-Based Learning (CBL) ist ein pädagogischer Ansatz, der die Schüler aktiv in eine reale, relevante und mit ihrem Umfeld verbundene Situation einbezieht. Der Kern des CBL besteht darin, dass das Lernen durch herausfordernde, offene Probleme mit mehreren Lösungen vorangetrieben wird. CBL baut auf der Grundlage des Erfahrungslernens auf (Lernen durch Handeln, Überraschungen und Rückschläge). Bei CBL ist der Lernprozess wichtiger als das Ergebnis (Lösungen). VREMANN-DE OLDE ET. AL. 2021, P. 3).

VREMANN-DE OLDE, C./ VAN DER MEER, F./ VAN DER VOORT, M. ET. AL. (2021): Challenge Based Learning @UT. Why, What, How. Antwort der Shaping Expert Group Innovation of Education auf die Beauftragung der UCOW. Twente: University of Twente.





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A2: Die Struktur des herausforderungsbasier ten Lernansatzes!



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Die Struktur des **herausforderungsbasierten Lernansatzes**:

1. **Beginnen Sie**

- mit einer **GROSSEN IDEE** (z. B. einem Thema oder Konzept, das auf verschiedene Weise erforscht werden kann und für die Lernenden von Bedeutung ist)
- Einigung auf eine **ABSCHLUSSFRAGE**, bei der sich alle Teilnehmer (Schüler, Lehrer, Externe usw.) auf eine Frage einigen, an der sie arbeiten wollen
- Verwandeln Sie die abschließende Frage in einen **AUFRUF ZUR HANDLUNG**, bei dem sich die Teilnehmer eingehend mit dem Thema befassen

<https://www2.tuhh.de/zll/challenged-based-learning/>



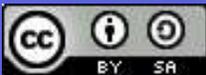


2. Untersuchen Sie

- In dieser Phase sollte sichergestellt werden, dass **alle Teilnehmer der Herausforderung ihr Wissen und ihre Fähigkeiten einbringen**, was bedeutet, dass sie auf einer gemeinsamen Basis an der Schaffung nachhaltiger Lösungen arbeiten sollten.
- Die Aktivitäten können aus **Simulationen, Experimenten, Projekten, Problemstellungen, Recherchen und Spielen** bestehen.
- Am Ende der Phase wird eine **klare Schlussfolgerung gezogen, die die Grundlage für die Lösung bildet**. Der Abschluss besteht aus Berichten und Präsentationen, die zeigen, dass die Lernenden



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Die Struktur des **herausforderungsbasierten Lernansatzes**:

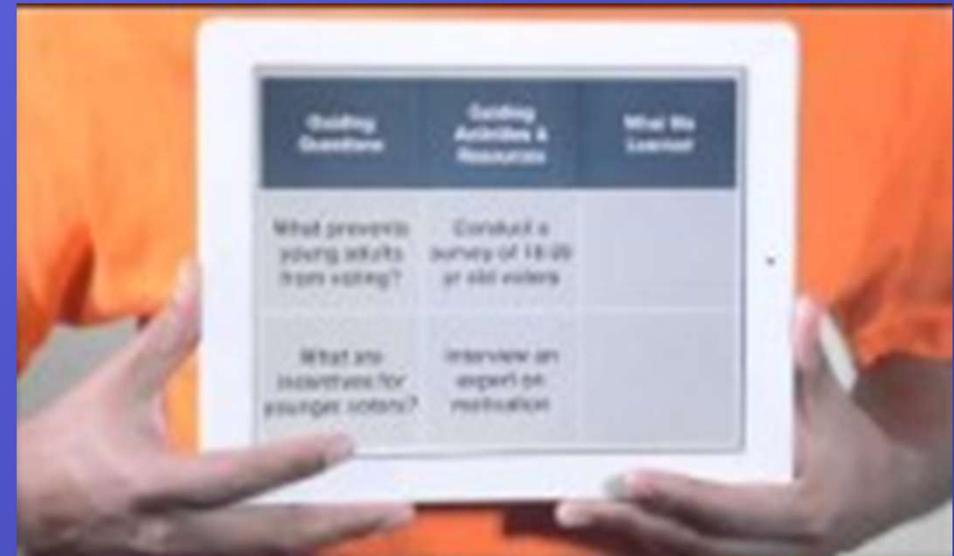
3. Handeln

- In der Aktionsphase werden Lösungen **entwickelt und** mit einem authentischen Publikum **umgesetzt** und die Ergebnisse bewertet.
- Die Partner können das Wissen nutzen, um **neue Lösungen** zu entwickeln, die dann **umgesetzt und bewertet werden** (z. B. Bewertung eines Prototyps).
- Eine **abschließende Präsentation in der Öffentlichkeit** bietet die Möglichkeit, Unterschiede zu anderen Lösungen aufzuzeigen

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Lernen mit Herausforderungen erklärt



<https://youtu.be/K-YU0Ea9JKg>



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A3: Formate des herausforderungsbasierten Lernens



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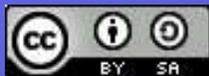
Formate des **Lernens mit Herausforderungen** :

"Herausforderungen - ob sie nun Hackathons, Wettbewerbe oder Design-Projekte genannt werden - sind Aktivitäten, die Schüler aller Niveaus herausfordern, schwierige Probleme zu lösen, und können als leistungsfähiges Instrument für Bildung und Engagement dienen. Sie bieten einen Anreiz, technische und mathematische Fähigkeiten zu verbessern und Teamarbeit und effektive Kommunikation zu fördern, die so genannten Fähigkeiten des 21.

Es gibt verschiedene Dimensionen, in denen Herausforderungen auftreten:

- **Dauer und Arbeitsbelastung** - Der Umfang der zu leistenden Arbeit (z. B. ECTS oder Arbeitstage)
- **Grad des Engagements** - Der Zeitpunkt, an dem die Schüler beginnen, eine Lösung zu finden
- **Umfang der Untersuchung** - Umfang der Nachforschungen und Vielfalt der Aktivitäten, die zur Lösungsfindung eingesetzt werden
- **Handlungsebene** - Öffnung der gefundenen Lösungen/Erkenntnisse für die Gesellschaft

<https://www2.tuhh.de/zll/challenged-based-learning/>





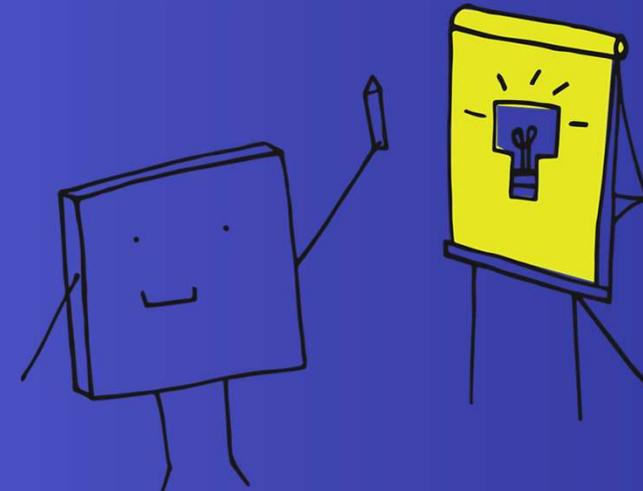
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Ausbildungs- phase

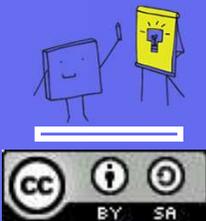
Arbeitssitzung in kleinen
Gruppen



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Aufgabe 1

- Was bedeutet CBL für meine Rolle als Lehrer?
- Sie haben 20 Minuten Zeit.
Bitte, arbeiten Sie mit einer anderen Person zusammen.
- Anschließend sollten alle ihre Ideen austauschen.

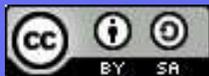
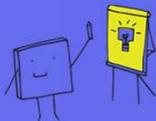


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Aufgabe 2

- Werfen Sie einen Blick auf <https://www.challengebasedlearning.org/toolkit/> sowie <https://www.utwente.nl/en/cbl/documents/cbl-eciu-tools-and-sources-for-teamchairs.pdf> und erstellen Sie Ihre eigene 45-minütige Unterrichtsstunde mit dem pädagogischen Ansatz des herausforderungsorientierten Lernens
- Sie haben 90 Minuten Zeit. Bitte arbeiten Sie selbständig.
- Anschließend sollte jeder seine Eindrücke auf der Grundlage dessen, was ihr alle aufgeschrieben habt, mitteilen.





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Herzlichen Glückwunsch!

Sie haben das Modul A über pädagogische Ansätze mit Schwerpunkt auf der Theorie des herausfordernden Lernens gemeistert!



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Program doskonalenia zawodowego i zestaw narzędzi do walidacji umiejętności

Część A: Budowanie cyfrowych umiejętności pedagogicznych dla nauczycieli VET

Moduł A: Podejścia pedagogiczne z naciskiem na teorię uczenia się opartego na wyzwaniach



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A Wprowadzenie

B Faza treningowa

Informacje o temacie
Podjęcia pedagogiczne z naciskiem na teorię opartą na wyzwaniach

Praca w małych grupach nad tematem
Podjęcia pedagogiczne z naciskiem na teorię uczenia się opartego na wyzwaniach



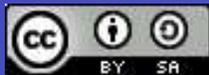
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A:

Wprowadzenie do tematu Podejścia pedagogiczne ze szczególnym uwzględnieniem teorii uczenia się opartego na wyzwaniach



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A1: Co to jest podejście pedagogiczne skupiające się na teorii uczenia się opartego na wyzwaniach?



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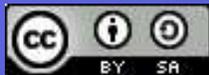


Czym jest **nauka oparta na wyzwaniach**?

"Uczenie się oparte na wyzwaniach (CBL) to podejście pedagogiczne, które aktywnie angażuje uczniów w sytuację, która jest rzeczywista, istotna i związana z ich środowiskiem. Podstawą CBL jest to, że uczenie się jest napędzane przez wymagające, otwarte problemy, które mają wiele rozwiązań. CBL opiera się na fundamencie uczenia się przez doświadczenie (uczenie się przez działanie, niespodzianki i niepowodzenia). W CBL proces uczenia się jest ważniejszy niż wynik (rozwiązania)". VREMANN-DE OLDE ET. AL. 2021, P. 3).

VREMANN-DE OLDE, C./ VAN DER MEER, F./ VAN DER VOORT, M. ET. AL. (2021): Challenge Based Learning @UT. Dlaczego, co, jak. Odpowiedź grupy ekspertów ds. kształtowania innowacji w edukacji na przykład UCOW. Twente: Uniwersytet Twente.

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A2:

Struktura podejścia do uczenia się opartego na wyzwaniach!





Struktura **podejścia do uczenia się opartego na wyzwaniach:**

1. **Zaangażowanie**

- Rozpocznij od **WIELKIEGO POMYSŁU** (np. tematu lub koncepcji, którą można zbadać na różne sposoby i która ma znaczenie dla uczestników).
- Uzgodnienie **PYTANIA KOŃCOWEGO, w ramach którego** wszyscy uczestnicy (uczniowie, nauczyciele, osoby z zewnątrz itp.) uzgadniają pytanie, nad którym będą pracować.
- Zamień końcowe pytanie w **WEZWANIE DO DZIAŁANIA, w** którym uczestnicy dogłębnie poznają temat.

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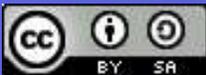
Struktura **podejścia do uczenia się opartego na wyzwaniach:**

2. Zbadać

- Na tym etapie należy upewnić się, że **wszyscy uczestnicy wyzwania wnoszą swoją wiedzę i umiejętności**, co oznacza, że powinni pracować na wspólnej podstawie w celu stworzenia zrównoważonych rozwiązań.
- Zajęcia mogą obejmować **symulacje, eksperymenty, projekty, zestawy problemów, badania i gry**
- Na koniec etapu ustalane są **jasne wnioski, które będą stanowić podstawę rozwiązania**. Wnioski składają się z raportów i prezentacji, które pokazują uczniom

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Struktura **podejścia do uczenia się opartego na wyzwaniach:**

3. Działać

- W fazie działania rozwiązania są **opracowywane i wdrażane** z autentycznymi odbiorcami, a wyniki są oceniane.
- Partnerzy mogą wykorzystywać wiedzę do projektowania **nowych rozwiązań**, które są następnie **wdrażane i oceniane** (np. ocena prototypu).
- **Końcowa publiczna prezentacja** daje możliwość pokazania różnic w stosunku do innych rozwiązań

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Wyjaśnienie nauki opartej na wyzwaniach



<https://youtu.be/K-YU0Ea9JKg>



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A3: Oblicza i formaty uczenia się opartego na wyzwaniach



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Oblicza i formaty **uczenia się opartego na wyzwaniach** :

"Wyzwania - niezależnie od tego, czy są nazywane hackathonami, konkursami czy projektami - to działania, które rzucają wyzwanie uczniom na wszystkich poziomach, aby rozwiązywali trudne problemy i mogą służyć jako potężne narzędzie edukacji i zaangażowania. Stanowią one zachętę do rozwijania umiejętności technicznych i matematycznych oraz doskonalenia pracy zespołowej i skutecznej komunikacji, czyli tzw. umiejętności XXI wieku".

Istnieją różne wymiary, w których pojawiają się wyzwania:

- **czas trwania i obciążenie pracą** - ilość pracy do wykonania (np. ECTS lub dni robocze)
- **poziom zaangażowania** - moment, w którym uczniowie zaczynają znajdować rozwiązanie
- **poziom badania** - poziom badania i różnorodność działań, które są wykorzystywane do znalezienia rozwiązania
- **poziom działania** - udostępnienie społeczeństwu opracowanych rozwiązań/wynalazków

<https://www2.tuhh.de/zll/challenged-based-learning/>





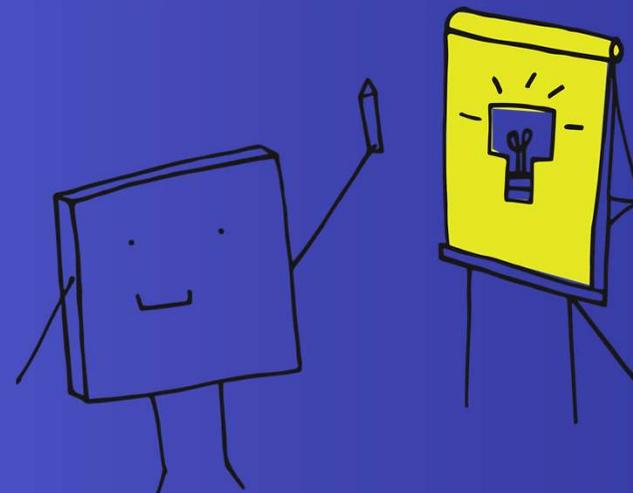
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INTERFACE

Faza treningowa

Sesja robocza w małych
grupach

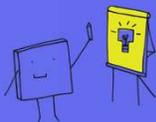


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Zadanie 1

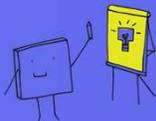
- Co CBL oznacza dla mojej roli jako nauczyciela?
- Masz 20 minut.
Proszę, współpracuj z inną osobą.
- Następnie wszyscy powinni podzielić się pomysłami.





Zadanie 2

- Zajrzyj na stronę <https://www.challengebasedlearning.org/toolkit/> oraz <https://www.utwente.nl/en/cbl/documents/cbl-eciu-tools-and-sources-for-teamchers.pdf> i stwórz własną 45-minutową lekcję, wykorzystując pedagogiczne podejście uczenia się opartego na wyzwaniach.
- Masz 90 minut. Pracuj samodzielnie.
- Następnie każdy powinien podzielić się wrażeniami na podstawie tego, co wszyscy zapisali.

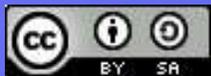




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Gratulacje!

Opanowałeś moduł A dotyczący
podejść pedagogicznych z naciskiem
na teorię uczenia się opartego na
wyzwaniach!



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INTERFACE



INTERFACE

**Ενδοϋπηρεσιακό πρόγραμμα κατάρτισης
και εργαλεία για την επικύρωση των δεξιοτήτων**

**Μέρος Α: Ανάπτυξη ψηφιακών παιδαγωγικών δεξιοτήτων για τους
καθηγητές ΕΕΚ**

**Ενότητα Α: Παιδαγωγικές προσεγγίσεις με έμφαση στη θεωρία
της μάθησης με βάση την πρόκληση**



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A

Εισαγωγή

B

Φάση κατάρτισης

Σχετικά με το θέμα
**Παιδαγωγικές προσεγγίσεις με
έμφαση στη θεωρία της
μάθησης με βάση την
πρόκληση**
Εργασία σε μικρές ομάδες για
το θέμα
**Παιδαγωγικές προσεγγίσεις με
έμφαση στη θεωρία της
μάθησης με βάση την
πρόκληση**



A:

Εισαγωγή στο θέμα
Παιδαγωγικές προσεγγίσεις με
έμφαση στη θεωρία της
μάθησης με βάση την
πρόκληση



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A1:

Τι είναι

μια παιδαγωγική προσέγγιση με
έμφαση στη θεωρία της
μάθησης με βάση την πρόκληση;





Τι είναι η μάθηση με βάση την πρόκληση;

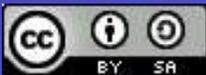
"Η μάθηση με βάση την πρόκληση (Challenge Based Learning - CBL) είναι μια παιδαγωγική προσέγγιση που εμπλέκει ενεργά τους μαθητές σε μια κατάσταση που είναι πραγματική, συναφής και σχετική με το περιβάλλον τους. Ο πυρήνας της μάθησης με βάση την πρόκληση είναι ότι η μάθηση καθοδηγείται από απαιτητικά, ανοιχτά προβλήματα που έχουν πολλαπλές λύσεις. Η μάθηση με βάση την πρόκληση βασίζεται στα θεμέλια της βιωματικής μάθησης (μάθηση μέσω της πράξης, των εκπλήξεων και των οπισθοδρομήσεων). Στη μάθηση με βάση την πρόκληση η διαδικασία μάθησης είναι πιο σημαντική από το αποτέλεσμα (λύσεις)" VREMANN-DE OLDE ET. AL. 2021, P. 3).

VREMANN-DE OLDE, C./ VAN DER MEER, F./ VAN DER VOORT, M. ET. AL. (2021): Challenge Based Learning @UT: Challenge Based Learning: Challenge Based Learning @UT. Why, What, How. Απάντηση της Ομάδας Εμπειρογνομώνων Διαμόρφωσης Καινοτομίας της Εκπαίδευσης στην ανάθεση του UCOW. Twente: University of Twente.



A2:

Η δομή της προσέγγισης της μάθησης με βάση την πρόκληση!



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Η δομή της προσέγγισης μάθησης με βάση την πρόκληση:

1. Κινήστε το ενδιαφέρον

- Ξεκινήστε με μια **ΜΕΓΑΛΗ ΙΔΕΑ** (π.χ. ένα θέμα ή μια έννοια που θα μπορούσε να διερευνηθεί με διαφορετικούς τρόπους και έχει σημασία για τους μαθητές).
- Συμφωνήστε σε ένα **ΤΕΛΙΚΟ ΕΡΩΤΗΜΑ** όπου όλοι οι συμμετέχοντες (μαθητές, καθηγητές, εξωτερικοί κ.λπ.) συμφωνούν σε ένα ερώτημα για να εργαστούν.
- Μετατρέψτε την τελική ερώτηση σε **ΠΡΟΣΚΛΗΣΗ ΓΙΑ ΔΡΑΣΗ**, όπου οι συμμετέχοντες μαθαίνουν σε βάθος για το θέμα

<https://www2.tuhh.de/zll/challenged-based-learning/>





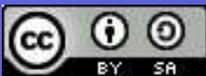
Η δομή της προσέγγισης μάθησης με βάση την πρόκληση:

2. Διερευνήστε το

- Η φάση αυτή θα πρέπει να διασφαλίσει ότι **όλοι οι συμμετέχοντες στην πρόκληση συμβάλλουν με τις γνώσεις και τις δεξιότητές τους**, πράγμα που σημαίνει ότι θα πρέπει να εργαστούν σε κοινή βάση για τη δημιουργία βιώσιμων λύσεων.
- Οι δραστηριότητες θα μπορούσαν να αποτελούνται από **προσομοιώσεις, πειράματα, έργα, σύνολα προβλημάτων, έρευνα και παιχνίδια.**
- Στο τέλος αυτής της φάσης διατυπώνονται **σαφή συμπεράσματα που θα θέσουν τα θεμέλια της λύσης.** Το συμπέρασμα αποτελείται από εκθέσεις και παρουσιάσεις που κάνουν οι μαθητές

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Η δομή της προσέγγισης μάθησης με βάση την πρόκληση:

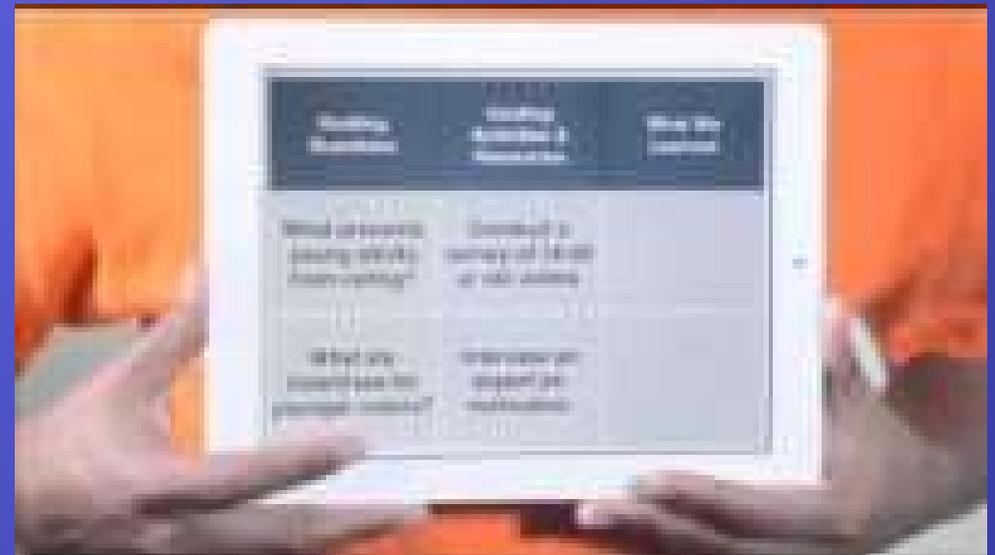
3. Πράξη

- Στη φάση της δράσης, οι λύσεις **αναπτύσσονται και εφαρμόζονται** με πραγματικό κοινό και τα αποτελέσματα αξιολογούνται.
- Οι εταίροι μπορούν να χρησιμοποιήσουν τη γνώση για να σχεδιάσουν **νέες λύσεις**, οι οποίες στη συνέχεια **εφαρμόζονται και αξιολογούνται** (π.χ. αξιολόγηση ενός πρωτοτύπου).
- Μια **τελική παρουσίαση στο κοινό** προσφέρει τη δυνατότητα να αναδειχθούν οι διαφορές από άλλες λύσεις.

<https://www2.tuhh.de/zll/challenged-based-learning/>



Επεξήγηση της μάθησης με βάση την πρόκληση



<https://youtu.be/K-YU0Ea9JKg>



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INTERFACE

A3:

Πρόσωπα και μορφές μάθησης με βάση την πρόκληση



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Πρόσωπα και μορφές μάθησης με βάση την πρόκληση :

«Οι προκλήσεις - είτε ονομάζονται hackathons, είτε διαγωνισμοί, είτε έργα σχεδιασμού - είναι δραστηριότητες που προκαλούν τους μαθητές όλων των επιπέδων να λύσουν δύσκολα προβλήματα και μπορούν να χρησιμεύσουν ως ένα ισχυρό εργαλείο για την εκπαίδευση και την ενασχόληση. Παρέχουν κίνητρο για την ανάπτυξη τεχνικών και μαθηματικών δεξιοτήτων και την ενίσχυση της ομαδικής εργασίας και της αποτελεσματικής επικοινωνίας, των λεγόμενων δεξιοτήτων του 21ου αιώνα».

Υπάρχουν διάφορες διαστάσεις στις οποίες εμφανίζονται προκλήσεις:

- **διάρκεια και φόρτος εργασίας** - Η ποσότητα της εργασίας που πρέπει να γίνει (π.χ. ECTS ή εργάσιμες ημέρες)
- **επίπεδο εμπλοκής** - Το χρονικό σημείο κατά το οποίο οι μαθητές αρχίζουν να βρίσκουν λύση
- **επίπεδο έρευνας** - Το επίπεδο της έρευνας και η ποικιλία των δραστηριοτήτων που χρησιμοποιούνται για την εξεύρεση μιας λύσης
- **Επίπεδο δράσης** - Παρουσίαση των λύσεων/ευρημάτων στην κοινωνία

<https://www2.tuhh.de/zll/challenged-based-learning/>





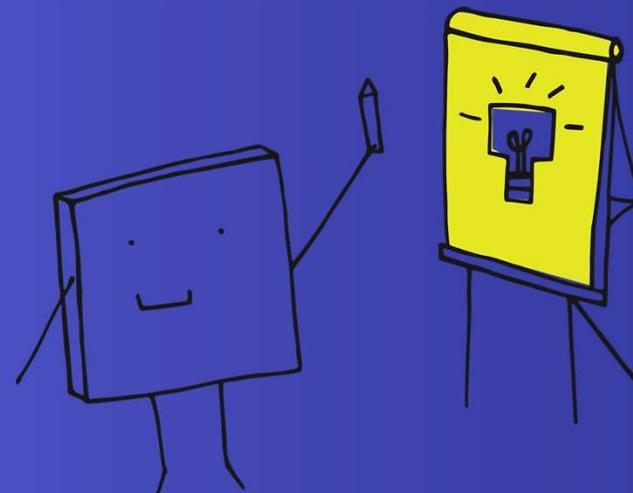
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INTERFACE

Φάση κατάρτισης

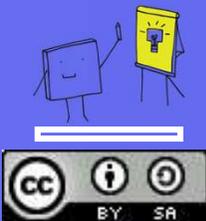
Συνεδρία εργασίας σε μικρές
ομάδες



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Εργασία 1

- Τι σημαίνει η μάθηση με βάση την πρόκληση για τον ρόλο μου ως εκπαιδευτικού;
- Έχετε 20 λεπτά.
Παρακαλώ, συνεργαστείτε με ένα άλλο άτομο.
- Στη συνέχεια, όλοι θα πρέπει να ανταλλάξουν ιδέες.

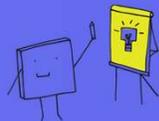


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Εργασία 2

- Ρίξτε μια ματιά στο <https://www.challengebasedlearning.org/toolkit/> καθώς και <https://www.utwente.nl/en/cbl/documents/cbl-eciu-tools-and-sources-for-teamchers.pdf> και δημιουργήστε το δικό σας 45λεπτο μάθημα χρησιμοποιώντας την παιδαγωγική προσέγγιση της μάθησης με βάση την πρόκληση
- Έχετε 90 λεπτά. Εργαστείτε μόνοι σας.
- Στη συνέχεια, ο καθένας θα πρέπει να μοιραστεί τις εντυπώσεις του με βάση αυτά που όλοι καταγράψατε.



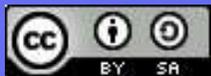
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Συγχαρητήρια!

Ολοκληρώσατε την ενότητα Α για τις παιδαγωγικές προσεγγίσεις με έμφαση στη θεωρία της μάθησης με βάση την πρόκληση!



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INTERFACE



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INTERFACE

Formação contínua de formadores e Manual para validação de competências

Parte A: Competências digitais para formadores. Módulo A: Abordagens pedagógicas centradas na teoria da aprendizagem baseada em desafios.



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A Introdução

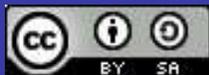
Sobre o tema

Abordagens pedagógicas centradas na teoria da aprendizagem baseada em desafios.

B Fase de formação

Trabalho em pequenos grupos

Abordagens pedagógicas centradas na teoria da aprendizagem baseada em desafios.





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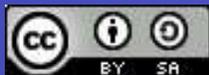


INTERFACE

A:

Introdução ao tema

**Abordagens pedagógicas
centradas na teoria da
aprendizagem baseada em
desafios**



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AI: O que é uma abordagem pedagógica centrada na teoria da aprendizagem baseada em desafios?





O que é a **aprendizagem baseada em desafios**?

A Aprendizagem Baseada em Desafios (ABD) é uma abordagem pedagógica que envolve ativamente os alunos numa situação real, relevante e relacionada com o seu ambiente. A base da aprendizagem baseada em desafios é o facto de ser impulsionada por problemas desafiantes e abertos que têm várias soluções. A ABD assenta na aprendizagem experimental (aprender fazendo, surpresas e retrocessos). Na ABD, o processo de aprendizagem é mais importante do que o resultado (soluções).

VREMAN-DE OLDE ET. AL. 2021, P. 3)

VREMAN-DE OLDE, C./ VAN DER MEER, F./ VAN DER VOORT, M. ET. AL. (2021): Challenge Based Learning @UT. Why, What, How. Response of Shaping Expert Group Innovation of Education to Assignment of UCOW. Twente: University of Twente.





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INTERFACE

A2:

A estrutura da **abordagem** **de aprendizagem baseada** **em desafios!**



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A estrutura da **abordagem de aprendizagem baseada em desafios:**

1. **Acionar**

- começar com uma **GRANDE IDEIA**
(por exemplo, um tema ou um conceito que possa ser explorado de diferentes formas e que seja importante para os formandos);
- chegar a acordo sobre uma **PERGUNTA FINAL**
em que todos os participantes (formandos, formadores, externos, etc.)
chegam a acordo sobre uma questão a trabalhar;
- transformar a pergunta final num **APELO À AÇÃO**
em que os participantes aprendem sobre o assunto em profundidade.





A estrutura da **abordagem de aprendizagem baseada em desafios:**

2. Investigar

- garantir que **todos os participantes no desafio contribuem com os seus conhecimentos e competências**, o que significa que devem trabalhar numa base comum para a criação de soluções sustentáveis;
- as atividades podem consistir em **simulações, experiências, projetos, conjuntos de problemas, investigação e jogos**;
- no final, são apresentadas **conclusões claras que irão estabelecer as bases para a solução**. A conclusão consiste em relatórios e apresentações que demonstram o conhecimento dos alunos.





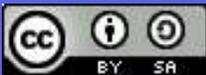
A estrutura da **abordagem de aprendizagem baseada em desafios**:

3. Atuar

- na fase de ação, as soluções são desenvolvidas **e implementadas** com um público autêntico e os resultados são avaliados;
- os parceiros podem utilizar os conhecimentos para conceber **novas soluções** que são depois **implementadas e avaliadas** (por exemplo, avaliação de um protótipo)
- uma **apresentação final em público** oferece a possibilidade de mostrar as diferenças em relação a outras soluções.

www.challengebasedlearning.org/pt/about/

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Explicação da aprendizagem baseada em desafios



youtu.be/d_ck6tIV1iM



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INTERFACE

A3: Formatos da aprendizagem baseada em desafios



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Formatos da **aprendizagem baseada em desafios:**

Os desafios – quer sejam designados por *hackathons*, competições ou projetos de design – são atividades que desafiam os alunos de todos os níveis a resolver problemas difíceis e podem servir como uma ferramenta poderosa para a educação e a capacitação. Constituem um incentivo para desenvolver competências técnicas e matemáticas e melhorar o trabalho em equipa e a comunicação eficaz, as designadas competências do século XXI.





Formatos da **aprendizagem baseada em desafios**:

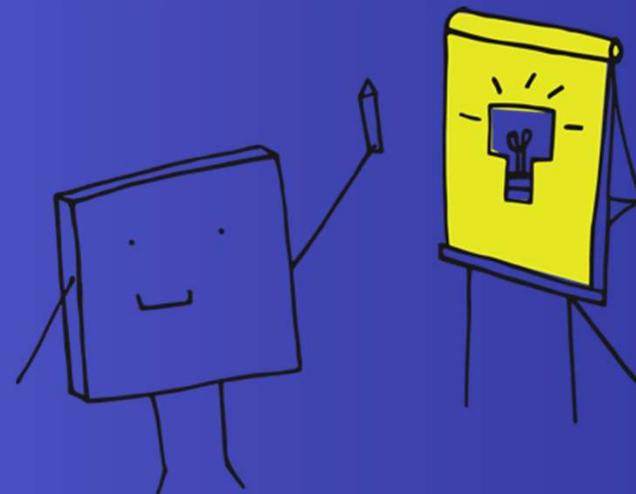
Existem diferentes dimensões em que os desafios ocorrem:

- **duração e carga de trabalho** – a quantidade de trabalho que tem de ser efetuada (por exemplo, ECTS ou dias de trabalho);
- **nível de envolvimento** – o momento em que os formandos começam a encontrar uma solução;
- **nível de investigação** – a investigação e variedade de atividades que são utilizadas para encontrar uma solução;
- **nível de ação** – partilha das soluções/descobertas feitas à sociedade.



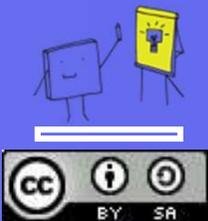
Fase de formação

Sessão de trabalho em pequenos grupos.



Tarefa 1

- O que significa o ABD para o meu papel de formador?
- Dispõe de 20 minutos.
Por favor, colabore com outra pessoa.
- Em seguida, partilhe as ideias com os outros grupos.



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Tarefa 2

- Consulte www.challengebasedlearning.org/pt/resources/ e crie a sua própria formação de 45 minutos, utilizando a abordagem pedagógica da aprendizagem baseada em desafios.
- Dispõe de 90 minutos. Por favor, trabalhe sozinho.
- Em seguida, partilhe as suas impressões com base no que escreveu.



Parabéns!

Dominou o módulo A sobre abordagens pedagógicas centradas na teoria da aprendizagem baseada em desafios!



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INTERFACE

Kvalifikācijas celšanas programma un instrumenti prasmju novērtēšanai

**A daļa: digitālo pedagogisko prasmju veidošana Profesionālās
izglītības skolotājiem**

A modulis: Problēmā balstīta mācīšanās pieeja



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A

levads

Par tēmu

**Problēmā balstīta mācīšanās
pieeja**

B

Apguves fāze

Darbs grupās par tēmu

**Problēmā balstīta mācīšanās
pieeja**

A: Ievads tēmā Problēmā balstīta mācīšanās pieeja



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A1: Kas ir Problēmā balstīta mācīšanās pieeja?



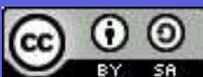
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Kas ir **problēmā balstīta mācīšanās pieeja**?

“Problēmā balstīta mācīšanās pieeja ir pedagoģiska pieeja, kas aktīvi iesaista izglītojamās situācijās, kas ir reālas, aktuālas un saistītas ar viņu vidi. To pamatā ir izaicinošas, beztermiņa problēmas, kurām ir vairāki risinājumi. Problēmā balstīta mācīšanās pieeja balstās uz mācīšanos darot, neparedzētām situācijām un kļūdām. Šajā pieejā mācību process ir svarīgāks par rezultātu (risinājumiem)”

Vremann-De Olde et. Al. 2021, 3. lpp.

VREMANN-DE OLDE, C./ VAN DER MEER, F./ VAN DER VOORT, M. ET. AL. (2021): Challenge Based Learning @UT. Why, What, How. Response of Shaping Expert Group Innovation of Education to Assignment of UCOW. Twente: University of Twente.



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A2: Problēmā balstītas mācīšanās pieejas struktūra!



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Problēmā balstītas mācīšanās pieejas struktūra:

1. Iesaiste

- Sāciet ar **LIELO IDEJU** (piemēram, tēmu vai koncepciju, ko varētu izpētīt dažādos veidos un kas ir svarīga izglītojamiem).
- Kopīgi vienojaties par galveno **JAUTĀJUMU** (sasniedzamo rezultātu).
- Virziet uz rīcību – veicot padziļinātu izpēti izzināt tēmu un atbildēt uz galveno jautājumu.

<https://www2.tuhh.de/zll/challenged-based-learning/>





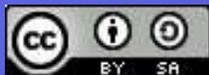
Problēmā balstītas mācīšanās pieejas struktūra:

2. Izpēte

- Šajā posmā ir jāpārlicinās, ka visi izglītojamie iesaistās - sniedz ieguldījumu ar savām zināšanām un prasmēm. Izglītojamiem kopīgi jāstrādā pie ilgtspējīgu risinājumu radīšanas.
- Izpētes uzdevumi var ietvert situāciju simulācijas, eksperimentus, projektus, problēmu kopas, pētījumus un spēles.
- Izpētes posma beigās tiek prezentēti radītie risinājumi izvirzītajam jautājumam (tie ietver arī secinājumus).

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Problēmā balstītas mācīšanās pieejas struktūra:

3. Rīcība

- Rīcības fāzē izstrādātie risinājumi tiek validēti, pilnveidoti un novērtēti atbilstošā auditorijā (kas spēj novērtēt risinājuma lietderību).
- Partneri var izmantot zināšanas, lai izstrādātu jaunus risinājumus, kas pēc tam tiek ieviesti un novērtēti (piemēram, prototipa novērtēšana).
- Publiska noslēguma prezentācija rada iespēju novērtēt izstrādāto risinājumu dažādību un pievienoto vērtību.

<https://www2.tuhh.de/zll/challenged-based-learning/>



Problēmā balstītas mācīšanās pieejas skaidrojums



<https://youtu.be/K-YU0Ea9JKg>



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A3: Problēmā balstītas mācīšanās pieejas veidi un formāti



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Problēmā balstītas mācīšanās pieejas veidi un formāti :

“Izaicinājumi – neatkarīgi no tā, vai tos sauc par hakatoniem, konkursiem vai dizaina projektiem – ir aktivitātes, kas izaicina visu līmeņu izglītojamos risināt sarežģītas problēmas un var kalpot kā spēcīgs instruments izglītošanai un iesaistīšanai. Tie nodrošina stimulu uzlabot tehniskās un matemātiskās prasmes un uzlabo komandas darbu un efektīvu komunikāciju, tā sauktās 21. gadsimta prasmes.»

Ir dažādas dimensijas, kurās rodas izaicinājumi:

- ilgums un darba slodze – veicamā darba apjoms (piem., ECTS vai darba dienas)
- iesaistīšanās līmenis – brīdis, kad izglītojamie sāk rast risinājumu
- izpētes līmenis – Izpētes līmenis un darbību dažādība, kas tiek izmantoti risinājuma atrašanai
- rīcības līmenis – radīto risinājumu demonstrēšana mērķauditorijai

<https://www2.tuhh.de/zll/challenged-based-learning/>

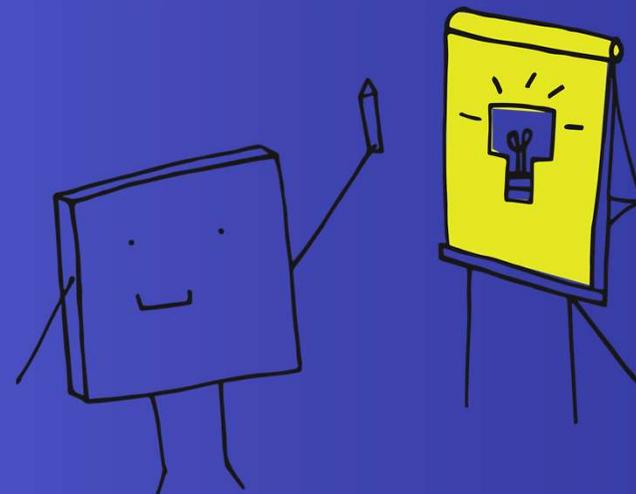


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Apguves fāze

Darbs grupās





1.uzdevums

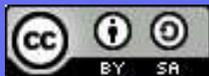
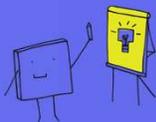
- Kāda ir mana, kā izglītotāja, loma problēmās balstītas mācīšanās pieejas īstenošanā?
- Jums ir 20 minūtes. Lūdzu, sadarbojieties ar kolēģi.
- Pēc uzdevuma veikšanas dalieties ar pārējiem.





2.uzdevums

- Apskatiet <https://www.challengebasedlearning.org/toolkit/> as well as <https://www.utwente.nl/en/cbl/documents/cbl-eciu-tools-and-sources-for-teamchers.pdf> un izveidojiet savu 45 minūšu nodarbību, izmantojot problēmā balstītas mācīšanās pieeju.
- Jums ir 90 minūtes. Lūdzu, strādājiet patstāvīgi.
- Pēc uzdevuma veikšanas dalieties ar paveikto un atziņām.





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Apsveicu!

Jūs apgūvāt A moduli - Problēmā balstīta mācīšanās pieeja.



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