A self-reported instrument to measure and foster students' science connection to life with the CARE-KNOW-DO model and open schooling for sustainability

JRST | WILEY

What does this study CARE about?

Relevance

Challenge: Growing Gap in green qualifications
(Students lack skills: 20.6% EU; 43.2% Brazil)

Issue: Science Disconnection hampers:
1.Scientifically literate and critical societies.
2.Sustainable and Wellbeing development.
3.Fair and green economy.

'Open Schooling', an approach o reduce the gap:
1.Introduced in 2015 alongside Agenda 2030.
2.Aims students'science connections for wellbeing and careers.
3.Involves real-life problem-solving with experts & citizens.
4.Requires solid evidence for scalability and sustainability.

'CARE-KNOW-DO', a model to support open schooling:
1.Emotional, intellectual, social and proactive engagement.
2.Actionable Knowledge with issues that students care about.
3.Future-focused learning model to connect science skills to life.

Science Connection, a novel conceptualisation as 'integrating science's meaning and purpose into local & global actions with socioscientific thinking':
1.Can it be measured from teachers' and students' experiences?
2.How can it be fostered through open schooling?

What does this study contribute to KNOWledge?

Rigour/Originality

Innovative Mixed Methodology:
- Cross-national study with new mixed methods.
- Qualitative findings into quantitative measures.
- EFA, CFA, descriptive, comparative & analytic steps.

Novel Multilanguage Instrument:
- Open self-reported instrument app.
- Just-in-time Feedback, open badge, and report.
- Actionable data for learners, educators & policymakers.

Open Schooling Scalability with open research:
- Connected 85 teachers and 2,082 underserved students.
- Supported transversal skills of 12,072 students.
- OS Declaration cocreated and 51,488 students engaged.

CARE-KNOW-DO Model with underserved students:
- 57%-80% self-reported positive science connection.
- Equity for boys & girls; Non-binary support needed.
- Primary to secondary drop, but recovery with age.

Real-Time Insights:
- Immediate educational impact measured.
- Recommendations for teachers, curriculum designers.
- Policymakers: qualitative & quantitative evidence.

What actionable findings DO make a difference?

Underserved learners impact

CONNECT-science self-reported, multi-language open research instrument

Helps teachers evaluate and foster:
- Real-world learning with purpose and meaning.
- Interventions for equity by gender, age, and region/country.
- Fun science-in-action with communities for a better future.

Supports students to:
- Think about how they connect science to life & society.
- Discuss their views on science applications and issues.
- Become aware of real-life science projects and careers.

Assists policymakers with:
- Actionable open data for informed policy-making.
- An open research model to localize open schooling.
- CARE-KNOW-DO insights for 21st-century education.
- Actions for Agenda 2030: local goals for quality education.
- Evidence for new policies for equity, diversity, and inclusion.

CONNECT
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