


**WHAT CAN
EMPIRICAL
RESEARCH TELL US
ABOUT CLIL
IMPLEMENTATIONS?**

J-CLIL West, Osaka, November 2019

Christiane Dalton-Puffer



**universität
wien**

- 
- CLIL principles & issues
 - CLIL research dimensions
 - research insights in five strands
 - outlook

Is it important what we call it?

CLIL

**Immersion
(FL, 2-way)**

CBI

**FL as medium
of instruction
(e.g. EMI)**

**bilingual
education**

LAC

A vignette

ここはビデオを削除しています。

Language-driven
or
content-driven?

What is our
evidence?

Hard CLIL – content-driven

- Dominant objective: content learning
- Content subject curriculum applies
- Taught by content teachers
- Assessment: content criteria

Soft CLIL – language-driven

- Dominant objective: language development
- Foreign-language curriculum applies
- Taught by language teachers
- Assessment: language criteria

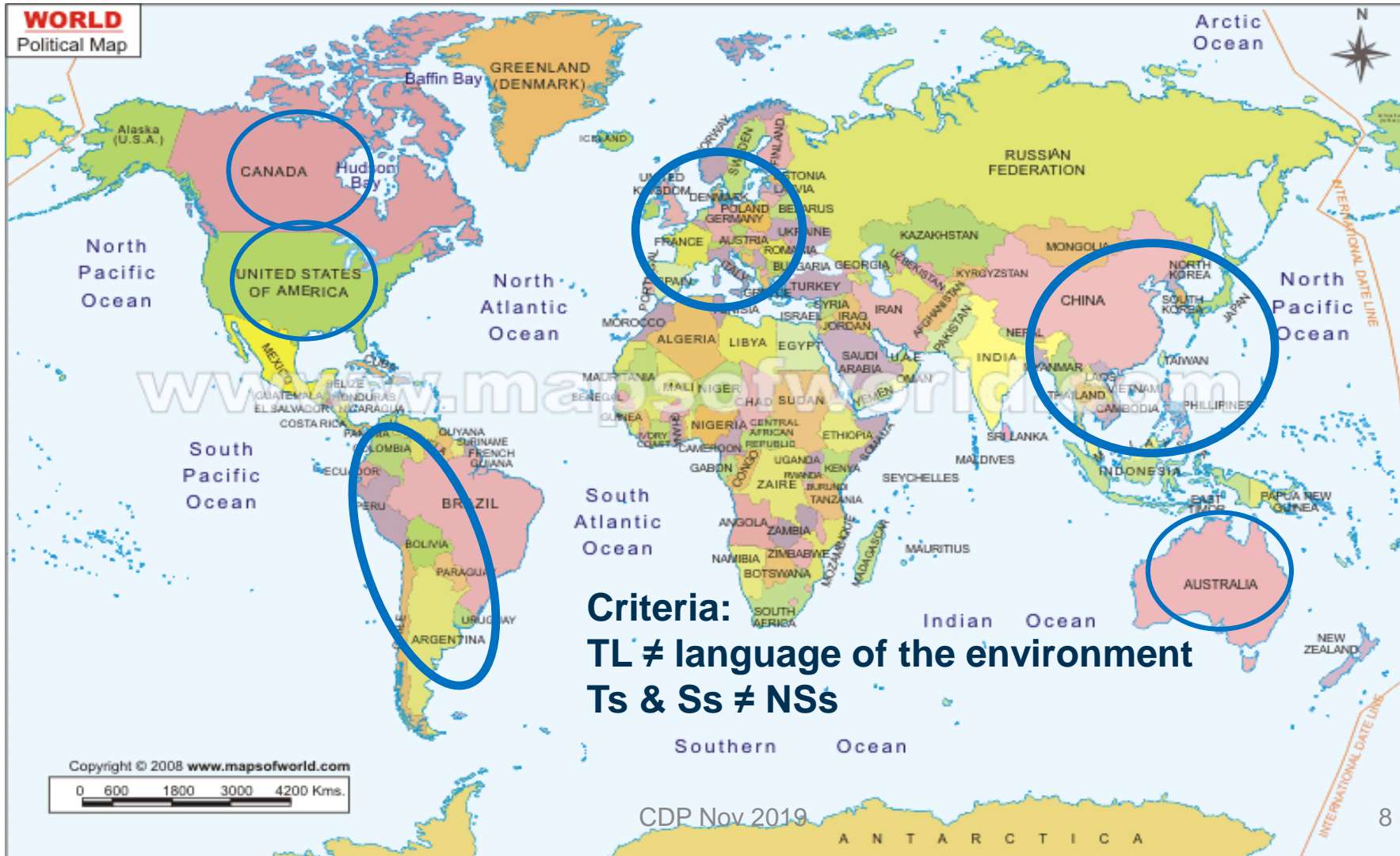
Expectations

- Higher overall language competence
 - Native-like FL competence
 - Cognitive advantages
 - Self confidence
 - Motivation
 - Learner autonomy
 - Intercultural competence
 - “cross-border competence”
 - Innovative pedagogy
 - Multiperspectivity
 - Cross-curricular integration
 - etc.
- (cf. e.g. Mehisto, Marsh, Frigols 2008)

What can research do?

- check & challenge expectations
- knowledge: document & describe
- rationale: explain & explore
- change: develop & activate
- share the insights created

concepts
models
theories



www.mapsofworld.com

Criteria:
TL ≠ language of the environment
Ts & Ss ≠ NSs

Copyright © 2008 www.mapsofworld.com



What questions do you have about CLIL?

think of 2-3 questions individually (2 mins), then exchange in a group of 3-4 people & decide on your top two questions as a group (5 mins).

CLIL Questions

- What are the learning outcomes?
- How should we measure these outcomes?
- What happens in the classroom? What do learners & teachers do/say?
- What are good materials & how can we get them?
- How do the participants experience CLIL?

Research strands

Learning
outcomes
language

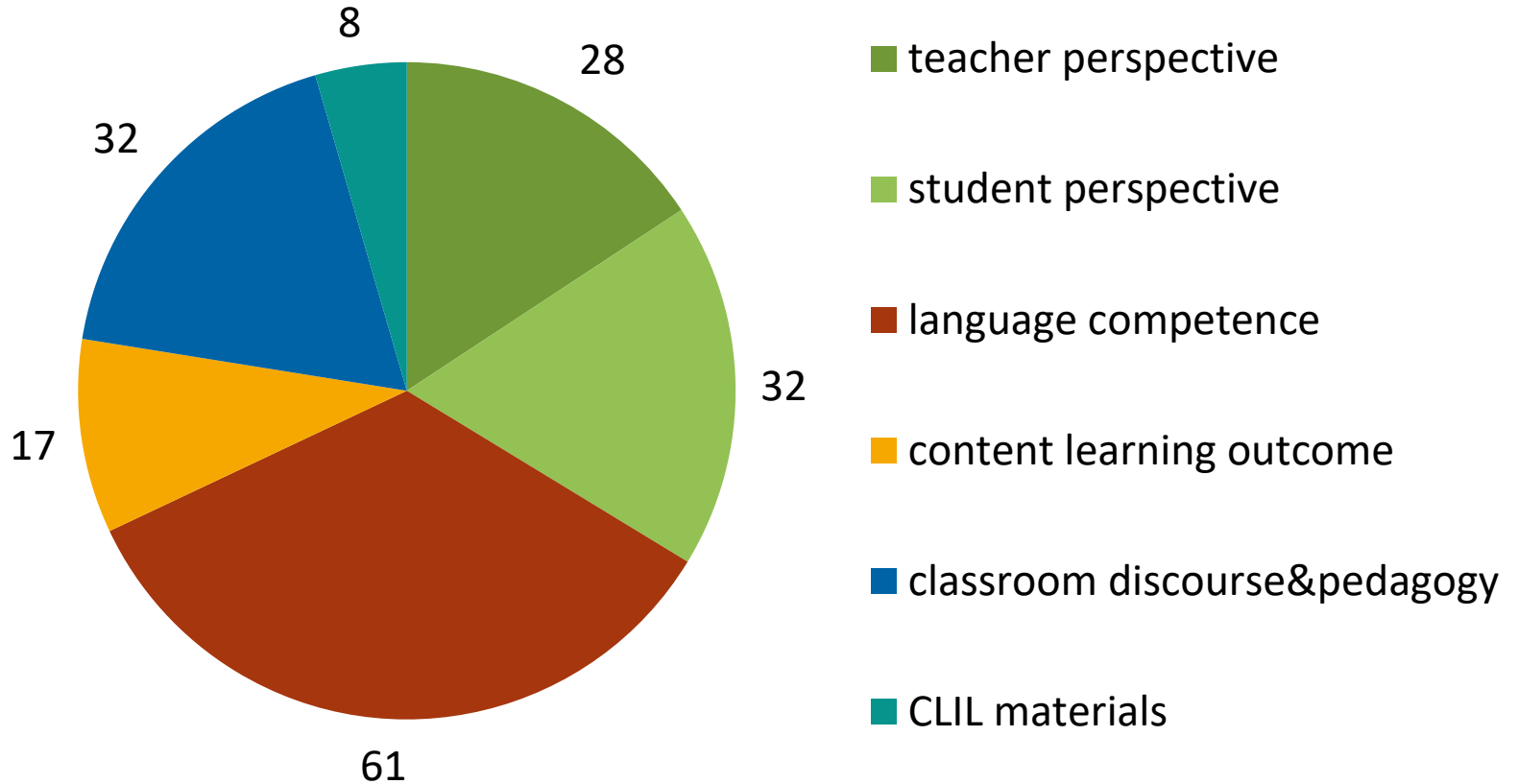
Learning
outcomes
content

Classroom
pedagogy &
discourse

Materials

Participant
perspectives

empirical CLIL studies – 178 journal articles 2016-2019

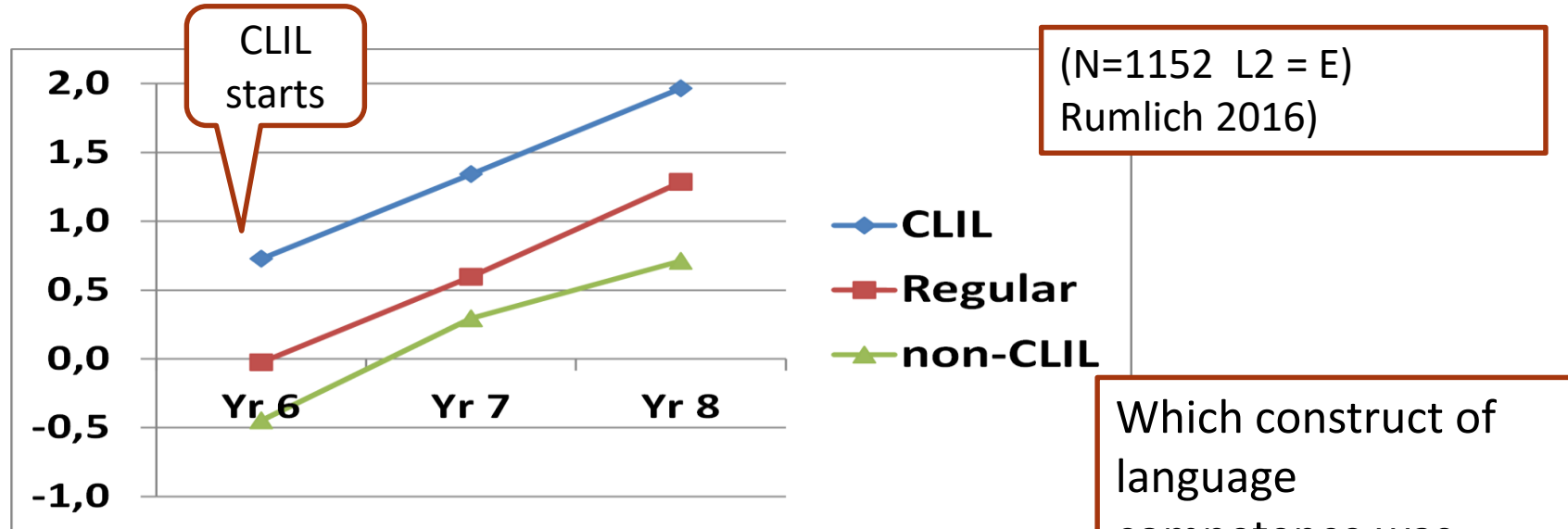


Learning outcomes language

Learning outcomes: language

- many studies since early 2000s
- construct “general language competence” (cf. CEFR)
- CLIL-students better than control groups, significant effects
- reasons? quantity? quality?
- criticism concerning selectivity & res.methods (Bruton 2011, Cenoz 2015, Pérez Cañado 2015)

Learning outcomes: language (Germany)



From the outset of the study **CLIL-students**

- had a **higher level of L2** English
- were **more motivated** towards language learning
- had **higher cognitive** abilities

Learning outcomes: language (Germany)

within-school selectivity of CLIL; N=1362
(Dallinger Jonkmann Hollm 2018)

- verbal cognitive skills
- parents' education&SES, cultural capital
- achievement & motivation in History and in the FL(E)

language performance:
CLIL student advantage

after controlling for differences:
CLIL advantage still substantial
and statistically significant
(>1.5 school years)

 significant advantages of CLIL students before start of programme

Learning outcomes: language (Spain)

N=2024 learners, 53 schools (Spain) (Perez Cañado 2018)
quasi longitudinal, grades 6-10-11

- language competence (L1, L2)
- content competence
- verbal intelligence, motivation
- type of school, SES

language performance:
no detrimental effect on L1

fully bilingual schools outperform
streamed ones (L1, L2, science)

in CLIL stream no effect of SES on
L2 scores

Moreno & Callejas 2018, Rascón & Bretones
2018

Learning outcomes: language

significant gains of CLIL groups over EFL-only groups
(especially productive skills)

- CLIL pupils' lead increases over time
- lead diminishes after end of CLIL programme
- explanatory variable = CLIL, in the long run
- being in a CLIL-programme diminishes effect of socio-economic status on lang + content scores

Learning outcomes content

Learning outcomes: content

Methodological challenge:

Which constructs are available & suitable?

- competency-models of national curricula?
- assessment barely standardized
- low levels of comparability internationally

Bonnet & Dalton-Puffer (2013)

Learning outcomes: content

Problem: operationalizing content knowledge/subject competence

ad-hoc tests designed for individual study

(e.g. Badertscher & Bieri 2009, Gablasova 2014)

Needed: constructs that are truly subject-inherent & integrative

(> interdisciplinary research)

Primary level: Massler et al. (2014), Leal (2016)

Secondary level:

history Bauer-Marschallinger & Dalton-Puffer (2019)

scientific citizenship: Garzón-Díaz (2018)

Learning outcomes: content

- **cognitive advantage:** intensive processing
Jäppinen (2005) maths, de Craen et al. (2007) maths, Kong & Hoare (2011) science, San Isidro & Lasagabaster (2018) soci;
- **cognitive disadvantage:**
Jäppinen (2005), Kong (2009) science, Lim Falk (2008) L1, Airey (2009) physics, Walker (2010) science, Tan (2011) science, Sanjurjo et al. (2017) science
- **zero effect:**
Jäppinen (2005): for oldest learner group (13-15)
Badertscher & Bieri (2009), Duske (2016) biology, Pérez Cañado (2019) science, Ito (2018) history/crafts
Dallinger et al. (2016): but CLIL-stream had 50% more history teaching time

Learning outcomes – cross-curricular

Motivation for school:

CLIL seems to help uphold motivation with middle-school learners

(Duske 2017, Lasagabaster & Doíz 2017)

Learning outcomes – cross - curricular

International orientation: Goris et al. (2017), Roiha & Sommer (2018)

Intercultural citizenship: Porto 2018, Schneider 2018

International Posture: Lockley (2015) – Japan, CLIL history Sept-Jan

- *It was a little surprised for me that Japan was affected by so many countries and at that time, Japan influenced so many countries.*
- *In [school], Japanese history classes were more Japan-centered and I had almost forgotten that it was only one part of international society . . . (#38)*
- *Knowing items which connect countries is interesting. I think there are more things which connect countries. If I know these things, I feel foreign countries closer than before. (#95)*
- *History is vital for student who learn foreign language because history gives us a key to know how our relationship has been built and how international exchange has been made. By understanding it, we can build more good relation, more good future with other country. (#94)*

Learning outcomes

“If there is no difference btw. CLIL & non-CLIL content results in a range of subjects, how is this possible if pupils are learning in a language in which they are only partially proficient?”

Badertscher & Bieri’s (2009) answer:

“It’s the classroom, stupid!”

classroom discourse & classroom pedagogy

Classroom discourse - findings

More negotiation of meaning than in L1 content classes

Systematic use of L1 to clarify difficulties in understanding

(Lin 2006, Li 2015, Gierlinger 2016)

Reduced range of teacher language

→ Less humour, spontaneity and stylistic variation

Dominance of oracy

Informal style – interaction between familiars

→ Little attention to academic register & subject-specific cognitive functions of discourse (academic language & metacognition)

Classroom discourse - findings

Student utterances

influence of group size and types of teacher questions

- reduced student participation
- extended types of questions → more elaborated student utterances
- richest learner language in role-plays
- tendency to switch to L1 in group and pairwork:
language of creating vs. language of presenting

(Dalton-Puffer 2007, 2011; Nikula et al. 2013)

Classroom discourse - insights

- Not only EFL but also CLIL happens in classroom lessons
- institutionally determined communication patterns: roles, topics and discourse spaces
- constrain what will be done and learned
- teaching culture/ tradition is local
(Dalton-Puffer & Nikula 2006, Duff 1995, Pérez Cañado 2018)
- **Type and quality of teacher questions & tasks is crucial**

Classroom pedagogy – in theory

- **student-centred** methods: task-based, project-oriented, cooperative learning
- **constructivist** principles: inquiry-based, discovery learning
- **language-aware** content-teaching & language scaffolding
- **cross-curricular** work & curricular integration, co-teaching
- **materials: purposefully designed** rather than “authentic”, include **ICT**, respond to various **learning styles**
- **assessment diversified**, formative, and holistic

(cf. Coyle, Hood, Marsh 2010; Pérez Cañado 2018)

Classroom pedagogy – in practice

1. Pedagogical design of CLIL & non-CLIL lessons is identical
(Dalton-Puffer 2007, Badertscher & Bieri 2009, Hüttner et al. 2013 etc., van Kampen et al 2018)
2. On the ground, CLIL is easier said than done
(Banegas 2012, Lara Herrera 2015, Liberali 2013, Czura et al. 2009, Infante et al.2009)
3. Spain: after 15 years of intensive implementation more positive picture starting to unfold
(Fernández & Halbach 2011, Lancaster 2016, Oxbrow 2018, Perez Cañado 2018)
 - adjustments tw. a learner-centered methodology
 - many materials authentic/purposefully made,
 - more varied evaluation/assessment methods

Content-based structured input

N=41, Polish L1, CLIL in Architecture (tertiary)
experimental, pre- post- delayed post-test study

- Intervention exploits learners' natural preoccupation with content knowledge to ensure the processing of form (defining & non-defining relative clauses)
- experimental group: large and persistent gains
- Comprehension-only controls zero effect

(Walenta 2018)

CLIL as trigger for innovative pedagogy

CLIL Physics in Italy (Capone et al. 2017)

- Flipped Classroom design for Quantum Mechanics unit student-centred activities in class
- motive: teachers cannot sustain whole lesson in English
- outcome: CLIL class understood Quantum Mechanics significantly better than the class taught traditionally in L1

CLIL/PBL in Japan (Parsons & Caldwell 2016)

1st year business students, private uni in Japan (N=79)
2 problem-based projects (health-related)

Pre/post questionnaire: students rated CLIL/PBL more enjoyable, more aligned with their learning goals
improved student motivation & attitudes tw. university English classes

materials

Materials

- top priority in teacher surveys
 - availability
 - fit with local curriculum
 - time-consuming production
- Theoretical work on principles underlying good materials
- little empirical research on materials or their use so far

Materials: quality criteria

(Dale, van der Es & Tanner 2010, Morton 2013, Ball-Clegg-Kelly 2015, Coyle 2007, Meyer 2010, Banegas 2016)

- thinking in longer sequences (than in FLT)
- primacy of task design
- foster critical thinking
- guiding input and supporting output
- scaffolding
- 3 dimensions: concepts, procedures, language
- authenticity (?) of materials
- the (inter-)cultural dimension

Working with the Clil-Pyramid

4. Clil-Workout

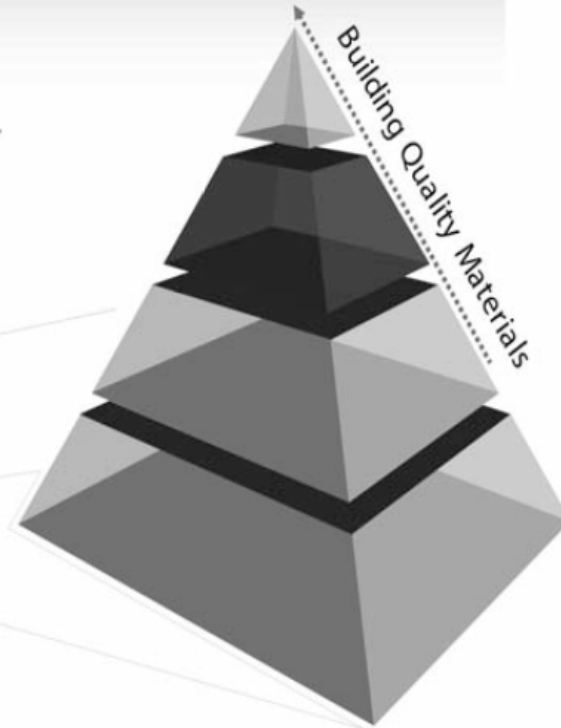
3. Task-Design:

- Cognition + Communication
- Output-Scaffolding

2. Choice of Media:

- Study Skills +
- Input-Scaffolding

1. Topic Selection



(Meyer 2010: 24)

Materials: development research

1. Purpose-made audio-visual listening material vs. YouTube (Zhyrun 2016): easier to comprehend, better contextualisation
2. CLIL science textbook analysis (Maxwell-Reid & Lau 2016) “images are self-explanatory”-fallacy; great bandwidth in extent to which the construction of technicality is supported
3. Design-Based Research on competence-based & integrated materials in progress: Bauer-Marschallinger (history), Hasenberger (science)

Participant perspectives

Focus on students & teachers...

Psychometric studies on
inner states

- Motivation
- Interest
- Affect (anxiety)
- Self-efficacy
- Intellectual Helplessness

Self-report studies on

- beliefs
- cognitions
- perceptions

Focus on students

- symptoms of **negative affectivity** & IH at primary level dependent on science/maths grades; English grades did not significantly predict (Otwinowska & Forys 2017)
- FL language **motivation**: stronger in CLIL participants already before onset of CLIL (e.g. Rumlich 2016, Mearns, deGraaff, Coyle 2017), peaks in middle school, then weakens (cf. general school motivation)
- target language as **‘protective mask’** (Maillat 2010)
- **Long-term effects** (Roiha & Sommier 2017)
Positive attitude to target language persists, neg impact on other FLs, intercultural attitudes diverge greatly

Focus on students: Japan

- Reasons for socsci **CLIL course choice** (Ishikura 2015; N=288)
domestic Ss: improve English;
SOC & international students: course content
domestic Ss find course more challenging but still doable
ca 1/3 of students say they need active T support (34:28%)
introducing more TAs reduced course attrition rate
- Reasons for **CLIL course choice** (Brown 2015)
9 of 14 of English courses in International Studies degree
qualitative interviews (8):
intellectual curiosity, sense of challenge perceived benefits of CLIL

Up to now English classes were only about English, about grammar or speaking. But by using English I can learn the content and I think the class using English is really effective for me. (Yoichi)

Focus on students: Japan

- FL language learning **motivation** (Pearsons & Caldwell 2016)
higher motivation for English in CLIL-based classes; N=79
- Birdsell & Sandu 2015 (N=204; several constructs)
interest in CLIL (ca 30% of Ss) shows sign. pos. correlation with
intrinsic motivation, effort and persistence, international outlook
but no sig. correlation with anxiety (!)

Focus on teachers

- CLIL as motivational factor – “challenge”
(e.g. Dalton-Puffer et al. 2008, Pavón & Méndez García 2017)
- CLIL benefits professional profile, recognition & collaboration
*“...we have found a new stimulus in our work
We are forced to renew our teaching habits...All this benefits our professional performance day by day.”* (from Pavón & Méndez García 2017)
- CLIL as threat to professional integrity; feelings of excessive demands
(e.g. Tan 2011, Moate 2011, Smit & Finker 2016, Gierlinger 2017, Pappa et al. 2017)

Focus on teachers

view on the role of language for the content subject
Indonesian science teachers:

I privilege science concepts; language is not what I prioritize here. So, the concept is important. As long as the concept has not been mastered, I cannot change [i.e. move on] to another topic. (chemistry teacher 1, Malaysia)

Is he able to express himself, correctly? Certain key words, did he use it? ... So my challenge is to make sure that he ... understand[s] ... and that he's able to express his ideas. (chemistry teacher 2, Malaysia) (Kong & Hoare 2011, Tan 2011)

Research strands

Learning
outcomes
language

Learning
outcomes
content

Classroom
pedagogy &
discourse

Materials

Participant
perspectives

CLIL as interdisciplinary challenge

- from an institutional perspective
- among participants
- in the classroom / pedagogical practice
- in research:
applied linguistics + subject education studies

Most urgent research needs

- AL team up with subject education researchers
- test-constructs for
 - ✓ content learning
 - ✓ subject-specific language (rather than “general English”)
- development research (DBR, Action Research) on tasks, materials, pedagogical designs
- long-term effects
- attention to dimension of pluriliteracy & international posture

Thank you for your attention

christiane.dalton-puffer@univie.ac.at

