The quality of quality

Toward a semiotics of quality in learning materials

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15th IARTEM Conference 11-13 September 2019: Researching Textbooks and Educational Media from multiple perspectives: Analysing the texts, studying their use, determining their impact
Lisa, what 19th Century figure was named 'Old Hickory'?

I don't know. You?
Lisa, if you'd bothered to do the assignment, you'd know the answer is... The Battle of New Orleans. I mean, Andrew Jackson.
What do we do?

Declare a snow day!
1. Phenomenology of quality

Perception, experience, interpretation, understanding and appreciation of qualities
Teaching materials promote the very intentionally stressed teaching, they are devoid of imagination, unambiguous, sad-ass, over-pedagogical in their helplessness. Teaching will probably be better in relation to the subject or theme, but if it is for life, the school must teach – then poverty is just around the corner!

Per Højholt, Danish poet, 1985, my translation
Quality of learning and teaching materials

The materials take power, replace the senses or give them extensions, which the students must experience as artificial and alienating [...] Many modern teaching materials have, as far as I know, the side effect that they stand between teacher and student, and often between the content and the student. You learn, but you do not experience, you do not sense.

Per Højholt, Danish poet, 1985, my translation
Phenomenology of quality

Quality of 1st order – experienced quality
- Phenomenological qualia (firstness)
- Qualities of the experienced object (potential polysemantic)

Firstness is the primordial experience of shapes, colors, patterns, configurations (as gestalts and unified wholeness) and perceptive and affective states (moods) in the perceiving subject.

Firstness in teaching is the aesthetic and phenomenological basis for learning. It is the rhythm, atmosphere, sensibility and opportunity to experience phenomena in teaching.
Phenomenology of quality

Quality of 1st order – experienced quality
- Phenomenological qualia (firstness)
- Qualities of the experienced object (potential polysemantic)

Quality of 2nd order – reflection on quality
- Quality that makes a difference to the subject
- Analysis and interpretation of qualities

Quality of 3rd order – generalization of quality
- Quality interpreted as a significant and generalizable difference
- Systematic prioritization and institutionalization of quality that counts
2. Amplify Science for grades 6-8

An example of a top rated learning material developed by the Lawrence Hall of Science, University of California, Berkeley
Amplify Science

A new phenomena-based core curriculum for grades K–8

TOP RATED BY EDREPORTS

Grades 6-8
WHY MATERIALS MATTER
Explore our new interactive feature to see the research and data behind why #MaterialsMatter

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UP NEXT

In Grade 7, Unit: Rock Transformations, students are presented with the phenomenon about how the rocks of the Rocky Mountains and the rock of the Great Plains have similar mineral composition. In Chapter 1: Rock Formations, students interact with this phenomenon as directly as possible by watching a video, interacting with a digital simulation, and engaging in a hands-on investigation to explore processes leading to the formation of rocks that cannot be observed first-hand.

**INDICATOR 1E**
Phenomena and/or problems are presented to students as directly as possible.
Research-based, multimodal pedagogy

Do           Talk           Read           Write           Visualize

Transduction  Transduction  Transduction  Transduction
Evidence from multiple sources
Unit Question
How does light interact with materials?

Chapter 1 Question

Chapter 2 Question

Chapter 3 Question

Chapter 4 Question
Can the crabs see the plankton they eat near the ocean floor?

Key Concepts
1. The movement of energy can be tracked by observing the changes the energy causes to matter.
2. A light source can emit more than one type of light.
3. When light is transmitted through or reflected off a material, the energy is not absorbed, so the material does not change.

Vocabulary
- Marvelous wavelength
Digital simulations as representation of qualities
In Grade 7, Unit: Phase Change Engineering Internship, students design a portable baby incubator that uses phase change materials that meet three criteria: keep the baby’s average temperature as close to 37 degrees Celsius, minimize the time the baby spends outside of the healthy temperature range, and keep costs low.

INDICATOR 1G
Materials are designed to include appropriate proportions of phenomena vs. problems based on the grade-band performance expectations.
A few critical questions

<table>
<thead>
<tr>
<th>GRADE LEVEL</th>
<th>DESIGNED FOR NGSS</th>
<th>COHERENCE AND SCOPE</th>
<th>ALIGNMENT RATING</th>
<th>USABILITY RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixth to Eighth</td>
<td>25/26</td>
<td>49/56</td>
<td>Meets Expectations</td>
<td>50/54</td>
</tr>
</tbody>
</table>

- Open-ended inquiry?
- All-inclusive system!
- Loss of unique quality?
- Guided discovery!
- Diversity of materials?
3. Semiotics of quality

Designation, valorization and contextualization of qualities
Four discursive regimes for quality

1. Unique quality

- Unique quality is specific and singular. It is the particular style of a learning material, a specially successful configuration of semiotic resources – text, sounds, pictures and diagrams – that vitalizes and creates potentials for a deep understanding of a phenomena or a problem. It is socio-culturally heterogeneous like an educational “terroir” that is assessed with thick, qualitative descriptions (for example German “Lehrkunstdidaktik”).

2. Traditional quality

- Traditional quality is normative and praxeological. The quality depends on a praxis settled over time – both in production and use of learning materials – with repetition, qualifying routines and recognized distinction. It is a historically appreciated practice (reputation and testimonials) trying to replicate and reproduce a particular quality based on norms and guidelines.

Inspired by Festi 2019
Four discursive regimes for quality

3. Standardized quality

- Standardized quality is generic and scalable. It is the regulated procedures and reproducible qualities ensuring a certain minimum of quality. It is based on adherence to a system of constrictions such as standardized curriculum and testing. The syntax of the process, visible control and quantification are valued at the expense of content and materiality.

4. Innovative quality

- Innovative quality is inventive and deconstructive. It is the innovative design or redesign of a learning material, a creative configuration of semiotic resources which reinvent and revitalizes teaching and learning. The negation and deformation of traditions and standards is a destructive part of creative interpretation and redetermination of qualities, amplifying the affordances of design and materiality.

Inspired by Festi 2019
The semiotic square of quality – production, use and distribution of materials

Local, national & global context

Standardized quality

- Standards, procedures, certifications, generic...

Unique quality

- Singularity, qualia, specific, aesthetical dimension...

Traditional quality

- Norms, guidelines, practice, routines, qualifying craft...

Innovative quality

- Redesign, (re)invention, new affordances, revitalizing...
Fine Wine Awakes on Sunny Slopes...

Coca-Cola

Loaded with 100+ kid-tested experiments in science, technology, engineering, art, and math—Science Experiments for Kids puts the STEAM back in learning.
4. Salto 7A, Learners book

An example of a prize winning learning material developed by Gyldendal Undervisning, Norway
Innhold

1 Spalteplass ........................................ 5
   Inn i tema:
   Et aviselesende folk .......................... 6
   Typisk avsl ................................. 7
   Å være en ged journalist ................... 8

   Språkverksted:
   Ulke typer setninger ......................... 18
   Repetisjon – å skrive sammensatte ord ... 20

   Les og forstå:
   Anette Aasheim: "Yrke: Levande handlede" ........................... 22

   Skriveskolen:
   Lag en rapportasje ............................ 39
   Kapittelempgaver og oppsummering ........ 34

2 Fortellinger som fenger ......................... 37
   Inn i tema:
   Fortellinger .................................. 38
   Kronologgi og tilbakeblikk ................. 40
   Å engasjere leseren ........................ 42
   Å avslutte en fortelling .................... 46

   Språkverksted:
   Bruk verb, adverb og adjektiv i
   beskrivelser ................................... 48
   Repetisjon – verbilder .................... 50

   Les og forstå:
   Bjørn Ingvaldsen: "Far din" .................. 52
   Tore Egeland: "En framand ringer på" ...... 60

   Skriveskolen:
   Skriv en fortelling med tilbakeblikk .... 68
   Kapittelempgaver og oppsummering ..... 72

3 Kilder – med kritisk blikk .................... 75
   Inn i tema:
   Kilder ........................................ 76
   Vær kildekritisk med TDNE ............... 79
   Opphavsrett .................................. 82

   Språkverksted:
   Legg opp en kritisk blikk ................. 85

4 Kunsten å overbevise ......................... 105
   Inn i tema:
   Argumenterende tekster .................. 106
   Skriftlig og mundtlig argumentasjon ..... 110

   Språkverksted:
   Setningsanalyse ............................ 116

   Les og forstå:
   Duniild J. Ecklund: "Du som forbruker" ... 120

   Skriveskolen:
   Argumenterende tekst ..................... 128
   Kapittelempgaver og oppsummering ..... 132

5 Drama .............................................. 135
   Inn i tema:
   Scene i historien ........................... 136
   Drama ......................................... 138
   Fra scene til litteratur ..................... 141
   Rollespill ..................................... 142

   Språkverksted:
   Tegnsetting – kolon og apostrof ......... 148
   Repetisjon – dobbel konsonant .......... 150

   Les og forstå:
   Espen Aukland: "Snøhvit" .................. 152

   Skriveskolen:
   Lag sketsj av en vits ....................... 162
   Kapittelempgaver og oppsummering ..... 166

Mer å lese ........................................ 169

Oppstasordsdel .................................. 234

Kilder ............................................. 256
Gold award 2018

Title: Salto 7A, Elevbok (Salto 7A, Learners book)
Subject: Norwegian literature, language learning, reading comprehension and writing
Authors: Kari Kolbjørnsen Bjerke, Marit Aars Eide, Pål Lundberg
Publisher: Gyldendal Undervisning
Country: Norway
- **Clarity of aims**: Do the materials clearly indicate the learning objectives? Are the skills taught and the target level clearly specified?

- **Clarity about achievement**: Do the materials help learners become conscious of success and of weaknesses and inform them about progress made in relation to the learning objectives?

- **Clarity of presentation**: Do the materials present a clear and logical structure with appropriate, comprehensible instructions and layout?

- **Clarity of rationale**: Do the materials provide the teacher with a methodological rationale, explaining the learning approach(es) used?
Evaluation of Salto 7A, Learners book

- The dual emphasis on reading comprehension and text creation develops highly valuable transferable skills that provide important foundations for any learning experience.

**Upgraded qualities**
- Clarity, accuracy & instruct. objectives
- Individualization & learner centredness
- Metacognition & transferability
- Motivation & personal interest

**Downsized qualities**
- Aesthetic experience & expr. objectives
- Content, otherness & world-centredness
- Phenomena based teaching & inquiries
- Subject-specific deep understanding
Qualities & signature of Salto

• Instructional objectives & evaluation
• General reading strategies
• General focus on theme and genre
• Transmission-based learning
• Metacognition & self-regulation
• Questions based on text-interpretation
• Close-ended & open-ended questions
• Innovative use of text creation
• Traditional & standardized quality
Far din


Nå vented vi bare på deg, Lisa, sa han.

Lisa hadde falt ut alle bøkene sine.

Jeg finner den ikke, sa hun.

Hva finner du ikke?

Matboksen min.

Da har du nok gjemet den hjemme.

Nei, mamma la den i sekken. Jeg så det. Jeg vet det.

Læreren så seg rundt.

Har noen sett matboksen til Lisa?

Ingen svarte.

Den er rød, sa Lisa. Helt ny.

Har noen sett en rød matboks?

Læreren så ut over gulvet. Det var ingen matboks der.

Kan alle løfte på sekken sin for å se om matboksen har falt på gulvet?

Matboksen var ikke der.

Læreren åpnet døra og knikket ut i gangen. Det lå ikke noen matboks der heller.

Da må du ha mistet den på vei til skolen, sa han.

Elvene sa at Lisa kunne få ei brødskive av henne. Lisa ville ikke ha.

Vi spiste. Lisa så ut vinduet. Kanskje hun så om det lå noe rødt der.


Ser du noe der ute, Lisa? spurtet Marcus.

Nei.

En politibil, kanskje?

Nei.

Mange lo. Læreren tok opp boka igjen, leste videre. Flere fortsatte å le.

Læreren knikket opp fra boka, spurtet hva de la av. Ingen svarte.

Da kan vi kanske fortsette, sa læreren. Nå var det bare Marcus som lo.

Hva er det, Marcus?

Ingen ting.
Ja, de sier det. I dag kom de tilbake, de lette i kjellerboden og på loftet også, og fant flere ting de sier han har stjålet.


Der tror at det ikke bare er fra Fabrikken han har stjålet. Derfor tok de det med seg.

Hva da?

Det du sa. Skiene våre, Syklene, Bildekkene, Sportsklær.


Mamma så i bordet.


Den sto der da jeg våknet.

Ja, du ble så glad.

Det var en slik jeg ønsket meg.

Mamma drakk av kaffen sin. Men bare litt.


Nei, svarte hun. Hvem sin er den da?

Jeg vet ikke.

Skal noen andre sykle på den?

Jeg vet ikke.


Han var far min, og han hadde gått meg en sykkel han hadde kjøpt, i bursdagspresang. Jeg hadde vært glad for sykkelen, det var det jeg hadde ønsket meg. En presang fra mamma og pappa. Nå var den borte.

(Altutdrag fra Bjørn Ingvaldsen: Før die)
Qualities & signature of KiDM
- Expressive objectives & perspectivation
- Aesthetic reading strategies
- Specific focus on the text world
- Inquiry-based learning
- Metacognition & self-determination
- Questions based on text-interpretation
- Semi-structured tasks and questions
- Innovative use of slow reading
- Innovative & unique quality

Qualities & signature of Salto
- Instructional objectives & evaluation
- General reading strategies
- General focus on theme and genre
- Transmission-based learning
- Metacognition & self-regulation
- Questions based on text-interpretation
- Close-ended & open-ended questions
- Innovative use of text creation
- Traditional & standardized quality
5. Concluding remarks

You learn, but you do not experience, you do not sense.
My colleague (X) had a municipal censor who in many cases gave 2 marks below her with an argument about (I heard it during lunch) that the student had skipped points in an analysis model. Thus, it was expected that the students went slavishly through a traditional model of analysis.

Coordinator from a KiDM-school
Could one imagine that the Danish L1 exam could reflect the students' subject-specific L1-competencies through a more inquiry-based approach? […] If the students asked a curious question, if the students wanted something with their analysis, then it would be a much more relevant test and there would be a clearer connection with their subject-specific L1-competencies. I think.

Coordinator from a KiDM-school