



HOW TEACHERS SELECT TEXTBOOKS AND EDUCATIONAL MEDIA

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In countries where teachers may choose their own textbooks they traditionally select a new series once every 5 to 10 years. Since the introduction of educational media into the classroom, the frequency of selecting textbooks and especially educational media have gradually changed. Digital learning environments offer teachers the possibility of bringing in their own content and this means that teachers nowadays have to decide sometimes several times a day which content to use with students; be it a you tube video, a piece of text, a rehearsal program, a game, a textbook chapter , etc...

Especially with respect to the selection of (digital) textbooks, we are interested in the influence that teachers have on the process, and whom they rely on.

What criteria do teachers use when selecting textbooks and educational media? Why do they use these criteria? How do they value criteria such as usability, appropriateness for their students, material learnability, and attractiveness? How do they gather information to determine if materials fit their criteria?

To answer these questions, we analysed the publications in the IARTEM Conference Volumes up to 2013 and IARTEM e-journal articles since 2017.

In this chapter we present our findings.

The influence of teachers in selecting textbooks and educational media

The influence of teachers in selecting textbooks and educational media is partly dependent on the approval system that rules in a country. Earlier we presented a typology of approval systems based on Repoussi & Tutiaux-Guillon (Wilkens 2011):

Model A: There is no state approval needed

Model B: There is state approval needed and only one textbook per subject is allowed to be used

Model C: There is state approval needed and only a few textbooks are allowed to be used

Model D: There is state approval but schools may select also other textbooks

Model E: A mix of two or more of the above models

Apart from Model B, schools are allowed to select textbooks which fit their needs.

The question is how they use that allowance. Several researchers noticed that the whole selection process is rather intuitive:

“Teachers do not see themselves limited in their ability to choose textbooks by the marketing power of the publishing houses, but on the other hand, they feel that their responsibility lies more in the moment of choice than on the analysis and evaluation tasks” (Sousa & Lourdes Dionísio 2011, 109). Sikorova (2002, 85) sees a “serious problem, where there is no ‘professional service’ as a resource for teachers’ decisions and teachers are **obliged to decide** and make this so often **intuitively**.” Vicente Álvarez & Rodríguez Rodríguez (2011, 101) also conclude that the selection of music and teaching materials is intuitive. According to them the main reasons are that the guidelines for evaluating materials are unknown and that “the economic interests of publishers and the most popular proposal influence the selection and use of materials over educational interests”. Sousa & Lourdes Dionísio (2011, 109) also speak about “lack of proper criteria for selection”.

Braga (2014, 17) states that their research verified that there are no specific meetings in most cases; the teachers meet up during the day – during the break, for example – and exchange ideas about the books they know or that are available for assessment.

If it is true that teachers do select their textbooks intuitively, other stakeholders probably have more influence on the process. Sousa & Lourdes Dionísio (2011, 109) state that although it appears that teachers participate more in school decision-making, it could be hypothesized that the selection of textbooks in schools is to some extent controlled by information delivered by publishing houses: “it could be concluded therefore that the school-based selection of textbooks is strongly controlled by the power of the market; however teachers may not always recognise this”.

Besides the publishing industry, the state also influences the process. Although the prevailing procedure used in textbook selection in the Czech Republic is teachers’ group decision-making, “the most external factor influencing the selection process was the presence of the Ministry of Education approval clause ” (Sikorova 2005, 347). According teachers, their reliance is as follows:

Other teachers’ opinions:	68%
Experimentation (try out):	64%
Reviews from independent institutions:	33%
Students’ opinions:	30%
Information from publishers:	25%

These findings were supported by Braga (2014, 19). She found that beginning teachers in particular frequently reported that they heeded the choices made by older or more experienced colleagues. Many teachers also prefer a known textbook that already has been used in another situation. Iversen (2014) states that student teachers are bearers of a tradition which leads to the reproduction of a distinct culture and therefore of the choice of teaching resources. Reichenberg (2014) also came to these figures. A survey of 319 teachers revealed the following ranking order:

1. Content
2. Past experience
3. Recommendations from colleagues
4. Readability
5. Price
6. Fairs

So we see that the process of selecting textbooks is rather intuitive, where teachers heavily rely on other teachers, well-known textbooks, information from publishers and clauses of the Ministry of Education.

Despite this the question holds that if teachers decide more or less intuitively, what criteria do they (think they) use during that intuitive process?

Which criteria teachers use when selecting textbooks and educational media

Several researchers have studied the phenomenon of the criteria teachers use or think they use when selecting textbooks. We will present their findings and afterwards try to draw some conclusions.

Sousa & Lourdes Dionísio (2011, 110) found that the five most important criteria according to teachers were the following:

1. Scientific accuracy
2. Methodology able to facilitate and benefit students
3. Coherent and functional organization, structured from the students' perspective
4. Clear texts and appropriate to the teaching grade and use student diversity
5. Adequacy to the development of skills included in the curriculum

Exarhos also found that Greek (science) teachers see textbooks as content full of "hands-on" activities. Reichenbergs (2014) survey of 319 teachers showed also

content as the most important criterion, with readability as the second. Teachers of pupils with educational needs however thought that readability of texts was more important than content.

The difficulty and the level of the text are also criteria often mentioned by teachers.

Braga (2014, 18) listed the following elements favoured by teachers in their analysis:

- teachers of the first grades: size of the text and vocabulary
- comparing with the local curriculum
- image quality, text level and activity types

Sikorova (2002) came to this order of criteria for textbook selection:

1. Sufficiency of exercises and questions
2. Variety of texts and exercises

In this study, graphic and typographical parameters only ranked 10th. Sikorova argues that it would have been better to separate graphic from typographical parameters. Which is understandable, because other sources report that illustrations are seen as an important criterion. Striking, however, is that in her same study teachers of higher grades rank ‘professional degree’ as the highest criterion. Exarhos (2005) also reported the relevance of illustrations in helping students comprehend text (especially graphics and tables), which perhaps maybe especially true for science textbooks. On the other hand, language teachers value two learning functions significantly higher than science teachers: selecting content and instructional strategies (Reints 2011, Dingemanse 2011).

Besides content, text and illustrations, the variety of exercises and assignments is often mentioned (see Sikorova 2002, Braga 2014, Sousa & Lourdes Dionísio (2011). A very interesting phenomenon was seen by Exarhos (2005, 379). He found that “male teachers rate science experiments as the most important characteristic of a science textbook. Male teachers prefer experiments and an inductive teaching model. On the other hand, female teachers prefer a great number of different types of illustrations as a starting point for discussion and a text-driven model to teach science”. The same results were shown in our own research in the Netherlands (Wilkens 2015).

With respect to the Netherlands, we conducted a study among student-teachers, asking them to rate relevant criteria. The results were as follows:

($N = 134$) (Mean on a Scale from 1 to 5)

	<i>M</i>	<i>SD</i>	Min	Max
Lay-out	3.98	0.79	1	5
Attractiveness	4.45	0.71	1	5
Linked to real life	4.33	0.69	3	5
Easy to work with	4.19	0.73	3	5
Linked to learning goals	4.28	0.72	2	5
Supporting learning process	3.71	0.81	2	5
Possibilities to differentiate	3.60	0.77	1	5
Cognitive load	3.31	0.74	1	5

Table 4. What Aspects do Student Teacher take into Account when Selecting Learning Materials
(unpublished presentation at IARTEM's Berlin conference of 2015; see also Werkman 2015)

What we see is that criteria connected to content (linked to learning goals, and linked to real life), score the highest, together with criteria that are connected with attractiveness. While criteria connected to textbook learnability (supporting the learning process, possibilities to differentiate, cognitive load) receive the lowest scores.

These scores are in line with the results of the latest nationwide monitor about teachers and textbooks where almost all teachers said that textbooks must be motivating.

Thus, it seems as though teachers do the following when selecting textbooks:

- are primarily content-oriented, especially in the higher grades
- check if textbooks are in line with the possibilities of pupils
- want textbooks to be attractive and motivating

Whereas they are less concerned about the learnability of textbooks. How can it be that the main function of textbooks has a minor place in the selection process by teachers? Let's try to find out.

Why teachers do not use learnability criteria when selecting textbooks and educational media

According to several researchers, teachers do not have knowledge about the quality of textbooks. Iversen (2014, 48): "Research shows that teachers state that they do not have enough knowledge about the quality of teaching resources and their importance in teaching. Individual schools have rarely developed criteria for

the selection of teaching aids. According to Skjelbred (2003), possible reasons for this may be that there is a lack of discussion about the quality of teaching resources in terms of professional goals and communication with students”. Ivic et al. (2013) tell us what it means when teachers first select textbooks on the basis of their intuition, and then make a second choice based explicitly on formulated criteria: “In our experience, when we ask teachers to make a selection between two textbooks, first on the basis of their own spontaneous responses and following that on the basis of certain explicitly stated criteria, as a rule the choice made the second time is the book that was rejected the first time. This observation is a striking illustration of the serious problems posed by procedures and criteria for selecting textbooks (Ivic et al 2013, 197). The lack of knowledge of teachers is not surprisingly as “the evaluation and selection of textbooks are the activities the teacher is mostly not skilled for” (Zikorova 2002, 85).

In 2015 we designed a research project about *What teachers know about the quality of textbooks and educational media*. Our research question was: What do (student)-teachers know about the quality of learning materials? More specifically we were interested in the question if student-teachers (4th grade) were able to judge which multimodal learning materials would contribute to an effective learning process and which would not?

We presented different materials where relevant design principles were used or not and we asked the student-teachers which of the two would help students in their learning and which would not.

The results were as follows (see Reints 2015; Werkman 2015):

Design principle		Frequency	<i>M</i>	%
Multimedia principle	false	27	0.2	10
	good	241	1.8	90
Modality principle	false	60	0.45	15
	good	342	2.55	85
Contiguity principle	false	59	0.44	15
	good	343	2.56	85
Redundancy principle	false	305	2.28	76
	good	97	0.72	24
Coherence principle	false	283	2.11	70
	good	119	0.89	30
Total	false	734	5.48	39
	good	1142	8.52	61

Table 2.

The student-teachers chose the right learning material if it comes to multimodality, media- and the contiguity principle. Whereas they chose the wrong learning material if it comes to redundancy and the coherence principle. The last two principles are heavily associated with the principle of “Less is More”. We also asked the student-teachers to score criteria they would use when selecting textbooks (see above). We found a strong correlation between the wrong choices regarding the design principle and the attention given to the criterion of textbook and educational media attractiveness.

These findings are in line with the experiences of the researchers referenced above.

Thus, it seems that teachers indeed have too little knowledge to take weighed decisions about the selection of textbooks and educational media. And it is probably for this reason that they do not use important criteria connected to the learnability of textbooks.

Who should make these decisions, then, according to teachers? Let’s see what teachers say about this.

What about experts and publishers in the selection process?

First of all: The evaluation process by external experts is not seen as a threat to quality. “In fact 56% of the teachers agree that evaluation committees will ensure quality” (Sousa & Lourdes Dionísio 2011, 107). And: “In fact, 83,9% of the teachers (strongly) agree that the approval system will contribute to the improvement of quality on education” (Sousa & Dionísio 2011, 108).

In a Dutch nationwide survey, it appeared that 50-60% of the teachers want to be informed if a textbook has proven effect in the learning process (Reints 2015).

Based on these findings, Sousa & Lourdes Dionísio (2011, 107) stated that they “contradict the position of those publishers who refused the evaluation system because it implied mistrust of teachers”. Two years earlier, these researchers already concluded that “According to the publishers’ point of view the educational “damage” (of letting experts judge, AR/HW) will consist of an educational stagnation and the results of the students will get worse (Sousa & Lourdes Dionísio 2009, 492). And: “Publishers also make the comparison with other countries where teachers select the materials. The country development comparison here makes teacher’s skills a decisive argument” (Sousa & Lourdes Dionísio 2009, 491). Above we mentioned that it is not reasonable to think that teachers indeed have enough skills to select textbooks on a weighed basis. Sousa & Lourdes Dionísio do not hold this opinion either: “Teachers agreed (74,61%) that there were problems with, and lack of quality in textbooks. This calls into question publisher’s arguments supporting the quality of the textbooks they produce, and which

also claimed that teachers' choices were the best indicators of quality" (Sousa & Lourdes Dionísio 2011, 109)

In a research project we carried out to investigate if different stakeholders weigh criteria differently, we found that publishers value two learning functions significantly higher than pupils and teachers: modalities and illustrations (Reints 2011; see also Dingemanse 2011). From the point of view of publishers, this seems understandable because both make textbooks more expensive.

The conclusion of Sousa & Lourdes Dionísio (2009, 495): "In conclusion, it might be said that the publisher's discourse about the evaluation of textbooks may represent an ongoing process of recontextualization, through which a certain organization (the school) and its discursive field is being colonized (sic!). This means that publishers also assume in their discourse to be the 'voice' of teachers, their hidden intent is that their discourse might be appropriated by the school and its actors and become naturalized as their own voice".

Therefore, it seems that teachers have no problem with independent expert judgments. On the other hand, publishers think that they know what teachers find important, but this seems not to be so. To be sure that learnability criteria play an important role in the selection process, independent expert judgments are inevitable.

And then we have the teacher training institutes...

Several researchers point out that it is necessary for teachers to be better trained in selecting textbooks. Exarhos thinks there is an "urgent need" for in-service training for Greek primary teachers on the criteria used to select a science textbook" (p. 380). Reichenberg (2014, 88) underlines the need to focus on how to choose teaching and learning materials in teacher education".

Braga (2014, 21) also wants cooperation with universities: "It is necessary to propose some activities on textbooks for teacher education programs. Besides these specific courses, we suggest the production of materials in collaboration with universities and schools. The aim behind this idea is to construct didactic and epistemological knowledge that could guide teacher's actions, helping to select textbooks in a more grounded way". Thus, Braga combines the upgrading of teacher's skills with expert involvement.

Ivic et al. (2013, 97) present an interesting solution: "Due to the complex process of meaningful selection of textbooks, committees of local teachers for a particular subject (...) might best be equipped for the task. Teachers must be given the adequate training to provide them with the competencies needed to make the selection. These important professional competencies have been neglected in teacher training (...)." So they combine the upgrading of teacher's skills with local teacher committees.

SUMMARY

Above we have traced research by IARTEM (related) researchers. The analysis of course is based only on their research. However we found some interesting points of discussion. First, it seems that the selection process of textbooks and educational media is rather intuitive, and that learnability criteria play a minor role in this process. It looks as if teachers have too little knowledge to use these criteria, and that expert judgment would be a welcome aid for teachers. An aid that publishers do not see as necessary. Independent expert judgments, combined with teacher training must be the solution to make the selection process more weighed and to heighten the quality of textbooks and educational media. Because, in the end, publishers will always follow the market...

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