

Open Access to the *Elemente der Naturwissenschaft*

1 “Classical” open access

1.1 Open access categories

The *Elemente der Naturwissenschaft* (*Elemente*) publishes four categories of short articles that have the character of a commentary or review. The *Research Review* category consists of contributions that recognize and evaluate new scientific results and developments, in order to place these in a wider context. We consider these contributions—along with discussions of recently published books, commentaries, and obituaries of important researchers—as a free service for all interested people, not just subscribers. All articles in these categories are published as “*classical*” *open access* content.

1.2 Hybrid categories

The *Elemente* publishes four additional categories of articles into which the majority of the articles fall; these make up the scientific core of the journal. They are: the *Articles* category (for original papers with new research), the *Essay* category (for particularly conceptual articles in a free format), the *Colloquium* category (for discussion and work on open questions), and the *Conference* category (for collected conference papers). At the time of publication these articles are not open access content, but they become so by *incremental open access* (see section 2). In this regard, these four categories may be considered hybrid categories.

1.3 Authors’ self-archiving

The *Elemente* allows authors to self-archive their articles, both as pre-print and post-print, irrespective of the category in which they have been published and without an embargo. We thus support what is known as the “Green route” to open access.

At a glance: journal category	GOA	IOA	GrR
Article	–	✓	✓
Essay	–	✓	✓
Colloquium	–	✓	✓
Conference	–	✓	✓
Research Review	✓	–	✓
Book Review	✓	–	✓
Commentaries	✓	–	✓
Obituaries	✓	–	✓

Table: “Classical” open access or “Gold route” to open access (GOA), incremental open access (IOA), and “Green route” to open access (GrR) for article categories in the *Elemente*

2 Incremental open access

2.1 The idea behind incremental open access

As a print journal, the *Elemente der Naturwissenschaft* is financed from subscriptions. For a small journal that wishes, in particular, to invite authors to submit articles supplementary to their major publications in renowned journals, using author-funded open access is hardly applicable (this would still have to cover the printing costs of the print medium.) In order to make all articles in the *Elemente* freely accessible (regardless of whether the authors use self-archiving,) we introduced *incremental open access* (IOA). The idea is to substitute the *article processing charge* with an *open access amount* that is not paid by the authors before publication, but after publication, jointly and successively, by the first readers—similar to a crowd-funding.

2.2 Covering publication costs step by step

Any income generated by a particular article will accumulate as incremental contributions to the *open-access amount* that covers the article publication costs. Any paid download will help to fund the *open-access amount* and will finance the eventual free accessibility of that article. Once the accrued income covers this amount, the article becomes freely accessible and can be downloaded from our website by anyone, without charge. An interested reader may either decide to wait until a certain article becomes open access, or may contribute to this process with a small amount (6 euros—and they will, of course, receive the article immediately.) A download fee at the *Elemente* is therefore not just a PPV fee that allows you to save and print an article for your personal use, but also benefits others.

author pay OA

incremental OA



Figure: Schematic comparison of the financing models of author-funded open access (author pay OA, left side) and of IOA jointly financed by the first readers and subscribers (incremental OA, right side). APC is the *article processing charge* and OAA is the corresponding *open access amount* in the IOA. The APC is applied prior to publication of the article (arrow to the right), while the OAA is applied after publication (arrow to the left).

The subscription income is also credited proportionately to the articles contained in the new issues, so that upon publication the larger portion of the *open-access amount* is already covered.

2.3 Advantages and disadvantages of IOA

While the delay for articles to reach free accessibility is a disadvantage of this IOA model, the redistribution of the fee from the authors or the sponsoring research institution to many readers, libraries, and institutions who then share the fee, can be seen as an advantage (and it also fulfills the causation principle).

This method of funding also ensures that the cost to the scientific community for these articles cannot be higher than those arising from a comparable *article processing charge* for a traditional open access journal. The *open access amount*, like the *article processing charge*, represents a “global cost cap” (and prevents any article from generating a profit that goes beyond sustained cost recovery.) However, while the *article processing charge* always accrues in full for a traditional open access article—whether it finds readers or not—this is not the case for the *open access amount* in the IOA.

As the open access in this model is reached step by step from *all* proceeds of subscriptions and PPV income, there is no chance of “double dipping” (as can occur in some hybrid journal models).

In detail: financing *incremental open access*

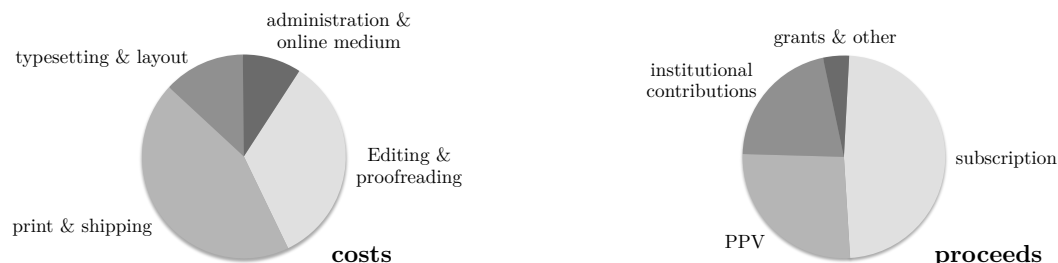
Article costs

The amount required to reach open access for an article is based on our actual costs and is currently 1,400 Euros. In our case, a little more than half this amount is due solely to production costs (printing and typesetting) and shipping costs. The remainder is due to editing, proofreading, online medium and administration costs.

Proceeds per article

The current proceeds from journal subscriptions by public institutions and private individuals cover half this amount at the time when the article is first published (i.e., the above-mentioned subscription prices cover production and distribution costs exclusively, for the

two issues published annually.) Another quarter, approximately, of the amount is financed through institutional contributions and grants. The remainder is covered incrementally by article downloads, i.e., PPV income.



For articles from the first *Elemente* issues (which have been refinanced as print issues) a reduced *open access amount* (300 Euros) is also applied, which helps recover the cost of digital republication (digitization, setup and administration of the online website, etc.). It is slightly above our actual costs in order to support the release of new articles and to compensate for deficits that inevitably arise when certain recent articles—even years after their publication—can not be refinanced in the IOA.

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