

# Building a Collaborative Content Platform with the Control Panel

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Dot All 2023 · Moritz L'Hoest

# Introduction

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- Frontend for users → User Experience (UX)
- Backend for authors → Author Experience (AX)

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- Authors are captive users

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- Frontend for users → User Experience (UX)
- Backend for authors → Author Experience (AX)
- Authors are captive users
- What if you need to provide AX for non-captive users?

# Table of Contents

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- 2. Content Modelling and Migration**
- 3. Defining Workflows and Boundaries**
- 4. Inviting Contributions with a Custom Dashboard**
- 5. Optimizing the Control Panel for Editors**

# Case Study “Begabungslotse”

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# Key facts

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- Website and database for education programs in Germany
- Registration for external collaborators
- Relaunched with Craft 3 in 2021
- Updated to Craft 4 in 2022
- Website: [begabungslotse.de](http://begabungslotse.de)

# Suche

Volltextsuche

bildung

Standort

Postleitzahl ...

Inhalte

Alle anzeigen

Zielgruppe

- Schüler/in 1,320
- Lehrkraft/Lehrende 838
- Eltern 565
- Bildungspraktiker/in 541
- Schüler/in Sek. I 434

+ Mehr anzeigen

Fach

- Mathematik und Naturwissenschaften 382
- MINT 201
- Technik- und Ingenieurwissenschaften 155
- Musik, Kunst, Gestaltung und Sport 139
- Technik 119

+ Mehr anzeigen

Thema

- Berufsorientierung 287
- Unterrichtsentwicklung 163
- Persönlichkeitsbildung 125
- Schulentwicklung 75
- Digitalisierung 62

+ Mehr anzeigen

2,087 Ergebnisse

Anbieter Institution, Verein, Verband

**Bildung & Begabung**

gemeinnützige GmbH

Bildung & Begabung

Kortrijker Str. 1

53177 Bonn



Medien Buch, Zeitschrift

**Bildung braucht Beziehung.  
Selbstkompetenz stärken- Begabungen  
entfalten**

**Autor:** Prof. Dr. Julius Kuhl, Dr. Susanne Müller-Using, Prof. Dr.

Claudia Solzbacher, Wiebke Warnecke (Hrsg.)

**Verlag:** Herder

Medien Buch, Zeitschrift

**Bildung braucht Persönlichkeit**

Wie Lernen gelingt

**Autor:** Gerhard Roth

**Verlag:** Klett-Cotta

Medien Buch, Zeitschrift

**Bildung? Bildung!**

26 Thesen als Herausforderung im 21.  
Jahrhundert

**Herausgeber:** Andreas Schlüter, Peter Strohschneider

**Verlag:** Berlin Verlag

Medien Buch, Zeitschrift

**Bildung in Deutschland 2012**

Umwertungen Autorengruppe Bildungswissenschaften

# Content Modelling and Migration

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# Content Modelling

---

- Keep it simple

# Content Modelling

---

- **Keep it simple**
- **Avoid adding fields for edge-cases**

## Subjects and Topics

### Subject

- Subject one ×
- └── ● Subject two ×
- └── ● Subject three ×

+ Select subjects

### Topic

- Topic one ×

+ Select topics

### Additional subjects

Some more subjects ...

380

### Additional topics

Some additional topics ...

351

# Content Modelling

---

- Keep it simple
- Avoid adding fields for edge-cases
- Reduce the number of categories

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- Reduce the number of categories
- Not everything needs to be a repeatable field

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- Keep it simple
- Avoid adding fields for edge-cases
- Reduce the number of categories
- Not everything needs to be a repeatable field
- Finally, drop the fax field ;-)

# Content Migrations

---

- Import content using migrations



```
$json = file_get_contents(__DIR__ . '/data.json');
$entries = json_decode($json, true, 512, JSON_THROW_ON_ERROR);

foreach ($entries as $entryData) {
    $section = $this→sections→getSectionByHandle('offer');
    $entryType = $section→getEntryTypes()[0];

    $entry = new Entry();
    $entry→sectionId = $section→id;
    $entry→typeId = $entryType→id;
    $entry→slug = $entryData['slug'];
    $entry→title = $entryData['title'];

    $entry→setFieldValues([
        'description' => $entryData['body'],
        // Set additional fields ...
    ]);

    $success = Craft::$app→getElements()→saveElement($entry);

    if (!$success) {
        echo '### ERROR: FAILED SAVING ENTRY' . PHP_EOL;
        echo sprintf('Validation errors: %s', print_r($entry→getErrors(), true));
        return false;
    }
}
```

# Content Migrations

---

- Import content using migrations
- Use the migration to clean up data

```
// Replace <h4> tags with <h3>
$html = str_replace(
    ['<h4>', '</h4>'],
    ['<h3>', '</h3>'],
    $html
);

// Remove disallowed tags and decode entities
array $allowedTags = ['p', 'h3', 'em', 'strong', 'a', 'ol', 'ul', 'li', 'br'];
$html = strip_tags($html, $allowedTags);
$html = html_entity_decode($html, ENT_QUOTES | ENT_HTML5, 'UTF-8');

// Remove empty tags (like <p> tags inserted for spacing)
return preg_replace(
    "/<[a-z]{1,10}>(?:\s|&nbsp;|\cdot)*<\/[a-z]{1,10}>/",
    '',
    $html
);
```

# Content Migrations

---

- Import content using migrations
- Use the migration to clean up data
- Not every special case can be handled - and you shouldn't try to



```
$number = $entryData['phone_number'];
$phoneNumberUtil = PhoneNumberUtil::getInstance();

try {
    $phoneNumber = $phoneNumberUtil→parse($number, 'DE');
} catch (\Throwable $e) {
    echo sprintf(
        '### WARNING: Dropping invalid phone number %s. Error: %s',
        $number,
        $e→getMessage()
    ) . PHP_EOL;
}
```

# Defining Workflows and Boundaries

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- Where are the boundaries between frontend and backend?

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- Set basic permissions to limit access

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- Fix workflow issues using hooks

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- Where are the boundaries between frontend and backend?
- Set basic permissions to limit access
- Add an editorial review process with the **Workflow** plugin
- Fix workflow issues using hooks
  - Permissions for entry types

```
/* UserPermissions :: EVENT_REGISTER_PERMISSIONS */
public function defineWorkflowPermissions(RegisterUserPermissionsEvent $event)
{
    $section = Craft::$app->sections->getSectionByHandle('offer');
    $entryTypes = $section->getEntryTypes();

    $entryTypePermissions = [];
    foreach ($entryTypes as $entryType) {
        $permission = 'workflowAccess:' . $entryType->uid;
        $entryTypePermissions[$permission] = [
            'label' => "Access entry type {$entryType->name}"
        ];
    }

    $event->permissions[] = [
        'heading' => 'Custom workflows',
        'permissions' => $entryTypePermissions,
    ];
}
```

```
● ● ●

/**
 * Entry::EVENT_DEFINE_ENTRY_TYPES
 */
public function limitEntryTypesByUserGroup(DefineEntryTypesEvent $e)
{
    $user = Craft::$app->getUser()->getIdentity();
    if (!$user) {
        return;
    }

    if ($e->sender->getSection()->handle != 'offer') {
        return;
    }

    $allowedEntryTypes = array_filter(
        $e->entryTypes,
        fn (EntryType $entryType) => $user->can('workflowAccess:' . $entryType->uid),
    );

    $e->entryTypes = $allowedEntryTypes;
}
```

# Defining Workflows and Boundaries

---

- Where are the boundaries between frontend and backend?
- Set basic permissions to limit access
- Add an editorial review process with the **Workflow** plugin
- Fix workflow issues using hooks
  - Permissions for entry types
  - Make drafts selectable in entries fields



```
/**  
 * Entries::EVENT_DEFINE_SELECTION_CRITERIA  
 */  
public function allowDraftsAsRelatedInstitute(ElementCriteriaEvent $e): void  
{  
    if ($e->sender->handle !== 'institutes') {  
        return;  
    }  
  
    $e->criteria = [  
        'drafts' => null,  
        'draftOf' => false,  
        'savedDraftsOnly' => true,  
    ];  
}
```

Closed

## BaseRelationField::normalizeValue doesn't fire an ElementCriteriaEvent #9963

MoritzLost opened this issue on Oct 14, 2021 · 3 comments



brandonkelly commented on Oct 15, 2021

Member

Just made this possible for the next release. Made the change in the private `_all()` method, not `normalizeValue()`, so it only affects internal field queries; not the default results you'd get in your own templates. So you will still need to add `.drafts(null)` when querying for the relations in your templates, if you want them to include any related drafts.

```
{% set related = clone(entry.myEntriesField)
    .drafts(null)
    .all() %}
```



That said, I would encourage you to `not` set `drafts => null` on the criteria without also setting these:

- `draftOf => false` – Only allow selecting *unpublished drafts*, rather than drafts of normal entries. This is important because if you were to relate to a draft of a normal entry, that relation would get deleted as soon as the draft was applied to its entry.
- `savedDraftsOnly => true` – Ignore any unpublished drafts which have never actually been edited (e.g. where someone clicked "New entry" and then immediately discarded the draft).

```
Event::on(
    Entries::class,
    Entries::EVENT_DEFINE_SELECTION_CRITERIA,
    function (ElementCriteriaEvent $e) {
        $e->criteria += [
            'drafts' => null,
            'draftOf' => false,
            'savedDraftsOnly' => true,
        ];
    }
);
```



# Defining Workflows and Boundaries

---

- Where are the boundaries between frontend and backend?
- Set basic permissions to limit access
- Add an editorial review process with the **Workflow** plugin
- Fix workflow issues using hooks
  - Permissions for entry types
  - Make drafts selectable in entries fields
  - Assigning existing entries to new authors

```
● ● ●

/**
 * Entry :: EVENT_AFTER_SAVE
 */
public function changeAssetAuthorWithEntry(ModelEvent $e)
{
    if (ElementHelper::isDraftOrRevision($e→sender)) {
        return;
    }

    $affectedAssets = Asset::find()→relatedTo([
        'sourceElement' ⇒ $e→sender→id,
        'field' ⇒ ['user_image', 'user_logo', 'user_files'],
    ])→all();

    foreach ($affectedAssets as $asset) {
        $asset→uploaderId = $e→sender→authorId;
        Craft::$app→elements→saveElement($asset);
    }
}
```

# Inviting Contributions with a Custom Dashboard

---

# Custom Dashboard Widgets

---

- The dashboard is great, but the default widgets aren't super useful

# Custom Dashboard Widgets

---

- The dashboard is great, but the default widgets aren't super useful
- Improve the dashboard with custom widgets

BL Begabungslotse MK

**Dashboard**

**Welcome Message**

In the beginning the Universe was created. This has made a lot of people very angry and been widely regarded as a bad move. Isn't it enough to see that a garden is beautiful without having to believe that there are fairies at the bottom of it too? In the beginning the Universe was created. This has made a lot of people very angry and been widely regarded as a bad move.

Arthur suggested they go for a walk. Anything that, in happening, causes something else to happen, causes something else to happen. "Some factual information for you. Have you any idea how much damage that bulldozer would suffer if I just let it roll straight over you?"

I don't want to buy a ticket, I just want to buy the zoo. I am omniscient and omnipotent, extremely vain and, what is more, I come in a handy self-carrying package. Let's be straight here. If we find something we can't understand we like to call it something you can't understand, or indeed pronounce.

"Forty-two," said Deep Thought, with infinite majesty and calm. Life was so pleasant and relaxed these days, there was time to let things sink in. He was a little man in a strange hat and he sold them a ticket. So we'll have to tell you something you already know but make it sound like news, eh?

Any such things that came his way were referred to others, who had, in turn, other people to refer such things to. Laser light flickered all over him as if he were a packet of biscuits at a supermarket check-out. Arthur Dent was grappling with his consciousness the way one grapples with a lost bar of soap in the bath.

Placeholder text generated by [dontpanic ipsum.moritzlost.de](#)

**Submit News**  
Have a suggestion for our news blog?  
Submit it here and we'll take a look!

**Link / URL**

**Message**

**Suggest news**

**Shortcuts**

- + Add institution
- + Add offer type one
- + Add offer type two
- + Add offer type three
- + Add offer type four

**My Drafts**

- My first draft
- My second draft

**My Submissions**

- Submission for "My first draft" on 9/28/2023, 3:41PM 3:41PM

- Custom widget “Welcome Message” to display introductory instructions

The screenshot shows the Craft CMS dashboard with a dark theme. On the left, there's a sidebar with links: 'Dashboard', 'Entries', and 'Assets'. The main content area has a 'Welcome Message' section with placeholder text from [dontpanicipsum.moritzlost.de](https://dontpanicipsum.moritzlost.de). To the right are several widgets:

- Submit News**: A form with fields for 'Link / URL' and 'Message', and a 'Suggest news' button.
- Shortcuts**: Buttons for adding institutions and offer types (one, two, three, four).
- Links**: Links to 'View my entries', 'Edit my account', 'Support inquiry', and 'Go back to the homepage'.
- My Drafts**: A list with 'My first draft' and 'My second draft'.
- My Submissions**: A list with a single item: 'Submission for "My first draft" on 9/28/2023, 3:41PM 3:41PM'.

- Built-in widget “My Drafts” to show unsubmitted drafts
- Customized Workflow widget “My Submissions” to show pending submissions

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- + Add institution
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- + Add offer type four

**Links**

[View my entries](#)  
[Edit my account](#)  
[Support inquiry](#)  
[Go back to the homepage](#)

**My Drafts**

My first draft  
 My second draft

**My Submissions**

● Submission for "My first draft" on  
9/28/2023, 3:41PM  
3:41PM

- Custom widget “Shortcuts” to all entry types
- Custom widget “Links” to other areas

BL Begabungslotse MK

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My first draft  
 My second draft

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● Submission for "My first draft" on 9/28/2023, 3:41PM 3:41PM

**Links**

[View my entries](#)  
[Edit my account](#)  
[Support inquiry](#)  
[Go back to the homepage](#)

- Custom widget “News submission” to hold a tiny piece of functionality

# Custom Dashboard Widgets

---

- The dashboard is great, but the default widgets aren't super useful
- Improve the dashboard with custom widgets
  - Welcome message
  - Drafts and pending submissions
  - Quick links and shortcuts to create content
  - News submission

# Modifying the Default Dashboard

---

- How can you change the default dashboard widgets?

# Modifying the Default Dashboard

---

- How can you change the default dashboard widgets?
- Default Dashboard plugin

# Modifying the Default Dashboard

---

- How can you change the default dashboard widgets?
- Default Dashboard plugin
- Ensure default dashboard widgets with a hook

```
/*
 * User::EVENT_AFTER_LOGIN
 */
public function ensureDefaultDashboardWidgets(User $user): void
{
    $existingWidgets = Craft::$app->dashboard->getAllWidgets();
    foreach ($existingWidgets as $widget) {
        Craft::$app->dashboard->deleteWidget($widget);
    }

    $defaultWidgets = [
        Craft::$app->dashboard->createWidget([
            'type' => 'modules\\Workflow\\widgets\\AdminNotes',
            'colspan' => 2,
        ]),
        Craft::$app->dashboard->createWidget(
            'modules\\Workflow\\widgets\\Shortcuts'
        ),
        Craft::$app->dashboard->createWidget(
            'modules\\Workflow\\widgets\\QuickLinks'
        ),
        // More widgets ...
    ];

    foreach ($defaultWidgets as $widget) {
        Craft::$app->dashboard->saveWidget($widget);
    }
}
```

# Optimizing the Control Panel for Editors

---

# Optimizing the Control Panel for Editors

---

- Custom diff view of changes in drafts

## Custom diff view (changed)

Entwurf 1



Vorschau

Ansicht

Entwurf anwenden

Entwurf speichern

Inhalt

SEO

Intern

Änderungen vergleichen

## Titel

Custom diff view

Custom diff view (changed)

## Beschreibungstext

<ul><li>Any such things that came his way were referred to others, who had, in turn, other people to refer such things to.</li><li>He had kept it ever since because he found it useful to carry a form of currency that no one would accept.</li><li>The ground was hanging menacingly above his head.</li></ul>

<ul><li>Any such things that came his way were referred to others, who had, in turn, other people to refer such things to.</li><li>It can be very dangerous to see things from somebody else's point of view without the proper training.</li><li>The ground was hanging menacingly above his head.</li></ul>

## Unterzeile / Einleitungstext

The Sandwich Maker almost sliced his thumb off.

Arthur Dent almost sliced his thumb off.

## Tags

Don't (1201111)

Panic (1201112)

Panic (1201112)

## Bild

Daniel Leone 197357 unsplash (1200888)

Etienne Delorieux 267370 unsplash (1200892)

## Weiterführende Links

<https://dontpanic ipsum.moritzlost.de/> | Dummy text generated with Don't Panic Ipsum

<https://dontpanic ipsum.moritzlost.de/> | Dummy text generated with Don't Panic Ipsum by Moritz L'Hoest

## Standort

Händelstraße 26

50674 Köln

NRW

Deutschland

50.9350682 | 6.9368545 | 15

Händelstraße 25

50674 Köln

NRW

Deutschland

50.9346217 | 6.9361193 | 15

## Anbieterart

Schule (136)

Beratungsstelle (137)

Hochschule (962924)

Schule (136)

Beratungsstelle (137)

Slug

custom-diff-view

Autor

ML ● Moritz L'Hoest ✘

Eintragsdatum

22.09.2023 17:06



Ablaufdatum



STATUS

Aktiviert



NOTIZEN ZU DIESER VERSION

ID

1201123

Status

● Aktiv

Erstellt am

22.09.2023, 17:06

Aktualisiert

22.09.2023, 17:07

```
/*  
 * Normalize the given value to a string representation.  
 */  
public function normalizeValue(mixed $value): string  
{  
    if (is_array($value)) {  
        $value = implode(PHP_EOL, array_map($this->normalizeValue( ... ), $value));  
    }  
    if (is_bool($value)) {  
        $value = Craft::t('app', $value ? 'Yes' : 'No');  
    }  
    if ($value instanceof DateTime) {  
        $value = Craft::$app->getFormatter()->asDatetime($value, 'medium');  
    }  
    if ($value instanceof MultiOptionsFieldData) {  
        $value = $this->normalizeValue(ArrayHelper::getColumn($value, 'label'));  
    }  
    if ($value instanceof SingleOptionFieldData) {  
        $value = $value->label;  
    }  
    if ($value instanceof Address) {  
        $value = $this->normalizeAddress($value);  
    }  
    if ($value instanceof ElementQuery) {  
        $value = $this->normalizeValue($value->all());  
    }  
    if ($value instanceof SuperTableBlockElement) {  
        $value = $this->normalizeSuperTableBlock($value);  
    }  
    if ($value instanceof User) {  
        $value = "{$value->fullName} ({$value->id})";  
    }  
    if ($value instanceof Element) {  
        $value = $value->hasTitles()  
            ? "{$value->title} ({$value->id})"  
            : $value->id;  
    }  
    return (string) $value;  
}
```

# Optimizing the Control Panel for Editors

---

- Custom diff view of changes in drafts
- Dashboard widgets for admins

# Optimizing the Control Panel for Editors

---

- Custom diff view of changes in drafts
- Dashboard widgets for admins
- Optimized entry lists

## Entries

All

Q Search

7

View ▾

**+ New entry**

All entries

	Entry	Anbieterart	Post Date	Author	Last Edited By
Beratungsangebote	Label	SEO overview			
Anbieter	Entry Criteria	<p>Section is one of</p> <ul style="list-style-type: none"><li>Begabungsorte</li><li>Datensätze A-Z</li><li>Glossar</li><li>Glossarbegriff</li><li>Home</li><li>Info-Seite</li><li>Kalender</li><li>News</li><li>News-Übersicht</li><li>Suche</li><li>Themen</li></ul>			ML Moritz L'Hoest
Angebot	+ Add a filter				ML Moritz L'Hoest
ANGEBOTE & FÖRDERANTRÄGE	Default Sort	Title	↓	↓	
Beratungsangebote	Default Table Columns	Choose which table columns should be visible for this source by default.			
Anbieter	<ul style="list-style-type: none"><li>SEO title</li><li>SEO description</li><li>Preview image</li><li>Entry Type</li><li>Post Date</li><li>URI</li><li>Link</li><li>Section</li><li>Author</li></ul>				
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ANGEBOTE & FÖRDERANTRÄGE					
Beratungsangebote					
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# Summary

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- Define your boundaries and workflows, and adjust the Control Panel to your needs using hooks.
- Custom Dashboard widgets provide a great entry point to the Control Panel.
- Save time where you can, so you can spend time where it really matters.

# Thank you!

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- Slides and code examples  
[github.com/MoritzLost/dot-all-2023](https://github.com/MoritzLost/dot-all-2023)
- Work  
[schwarzdesign.de](http://schwarzdesign.de)
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  - E-mail:* m@moritzlost.de
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  - Stack Exchange:* MoritzLost