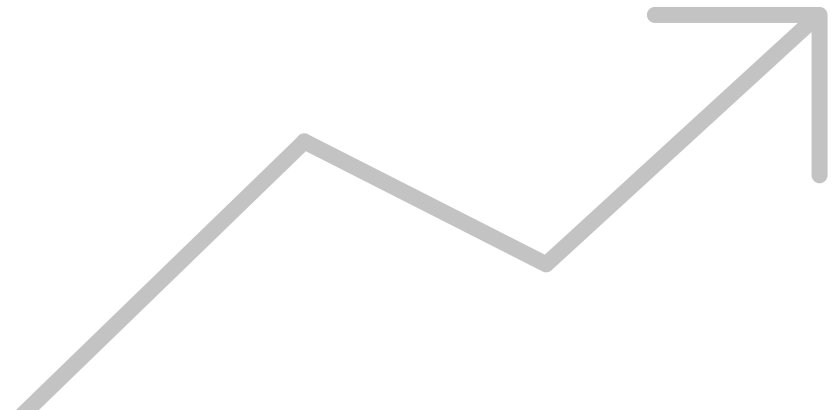


Designing App-Diaries – What works, what doesn't?

Results from an in-depth pretest for the German
Time-Use-Survey (TUS) 2022

MASS Workshop 2022, 16./ 17. June

Daniel Knapp



The German Time-Use-Survey 2022

- » Collects data about time use of households in Germany
- » Every 10 years (since 1991), 10k households (2022), voluntary
 - » 1. Household questionnaire
 - » 2. Individual questionnaire
 - » 3. Diary: 3 days (for each household member aged 10+ years)
- » 2022: Online First → App + Web

Musterseite von Vater Peter

Uhrzeit	Was haben Sie gemacht? (Hauptaktivität)	Was haben Sie gleichzeitig gemacht? (Nebenaktivität)	Welches Verkehrsmittel haben Sie genutzt?	Wer war dabei?				
				Ich war allein	Partner/ Partnerin	Kinder unter 10 Jahren	Andere Haushaltsmitglieder	Andere bekannte Personen
15.20-15.30	im Büro gearbeitet			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15.30-15.40	zum Kindergarten gefahren	Radio gehört	Auto	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.40-15.50				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.50-16.00	Sohn abgeholt	mit Erzieherin unterhalten		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16.00-16.10	mit Sohn nach Hause gefahren	mit Sohn unterhalten	Auto	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.10-16.20	Geschenk über Internet bestellt			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.20-16.30	Kaffee getrunken	mit Frau, Kindern unterhalten		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16.30-16.40		Zeitung gelesen		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.40-16.50	Geschirr gespült			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.50-17.00				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.00-17.10	Hemd gebügelt	Sohn beaufsichtigt		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.10-17.20	der Tochter bei den Hausaufgaben geholfen			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17.20-17.30				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17.30-17.40	zum Supermarkt gegangen		zu Fuß	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.40-17.50	eingekauft		zu Fuß	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.50-18.00	nach Hause gelaufen		zu Fuß	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.00-18.10	für die Nachbarin die Klingel repariert	mit Nachbarin unterhalten		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.10-18.20	Abendbrot gegessen	mit Frau, Kindern unterhalten	Fahrrad	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18.30-18.40	zum Elternabend gefahren		Fahrrad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.40-18.50				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18.50-19.00				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.00-19.10	als Elternvorsitzender am Elternabend teilgenommen (ehrenamtlich)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.10-19.20				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.20-19.30				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19.30-19.40				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19.40-19.50	vom Elternabend zurück gefahren		Fahrrad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.50-20.00				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20.00-20.10				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20.10-20.20	Fernsehen geschaut	mit Frau, Kindern unterhalten		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20.20-20.30				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20.30-20.40				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20.40-20.50	im Bad fertig gemacht	mit Frau unterhalten		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.50-21.00	umgezogen			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.00-21.10	geschlafen			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.10-21.20				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Method

Pretesting the Time-Use-App: Usability and comprehension

- » Qualitative testing of the new App: 3 -step approach
 - » Internal functionality testing
 - » Internal qualitative testing with (uninformed) colleagues (n=20)
 - » External qualitative testing with Respondents (“ Rs”; n=30)
- » → Rs were asked to ...
 - » 1. Fill out a detailed time-use diary app for two days,
 - » 2. Document first impressions, issues and bugs on a short questionnaire,
 - » 3. Participate in comprehensive, individual cognitive interviews
- » ...+ insights from previous app & responsive web pretests

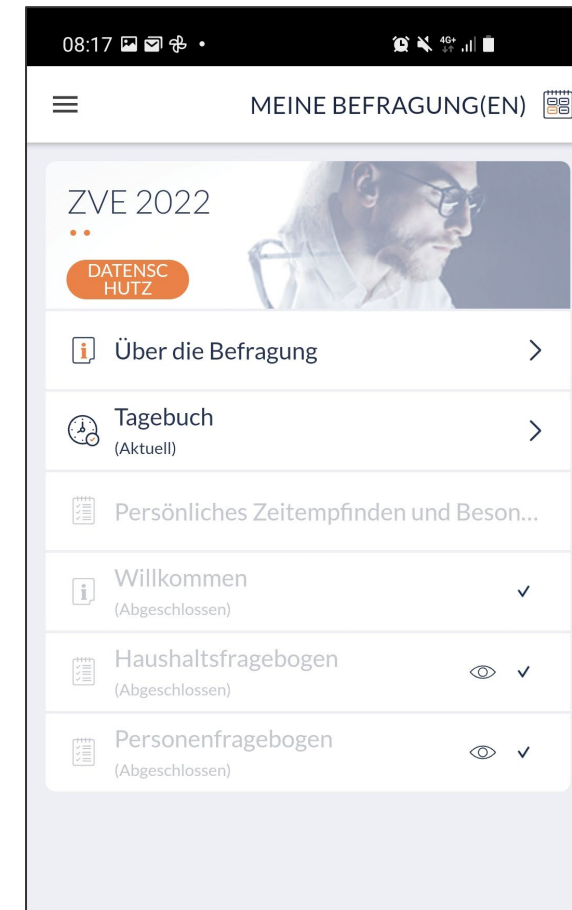
I. App structure

General setup

- » Generally, Rs preferred to have all parts included within the app
 - » Less effort: Login once, all parts in one place, no break inbetween

Main hub → provide a clear overview and guidance

- » List all parts (not just one at a time)
 - » → Rs preferred to know what's coming & at which part they are
- » Clearly highlight the currently active survey part
 - » number all tasks & visibly label finished parts (green “tick”)
- » Support navigation between tasks (eg.: popup windows)



Congratulations !

Part 2: XYZcompleted

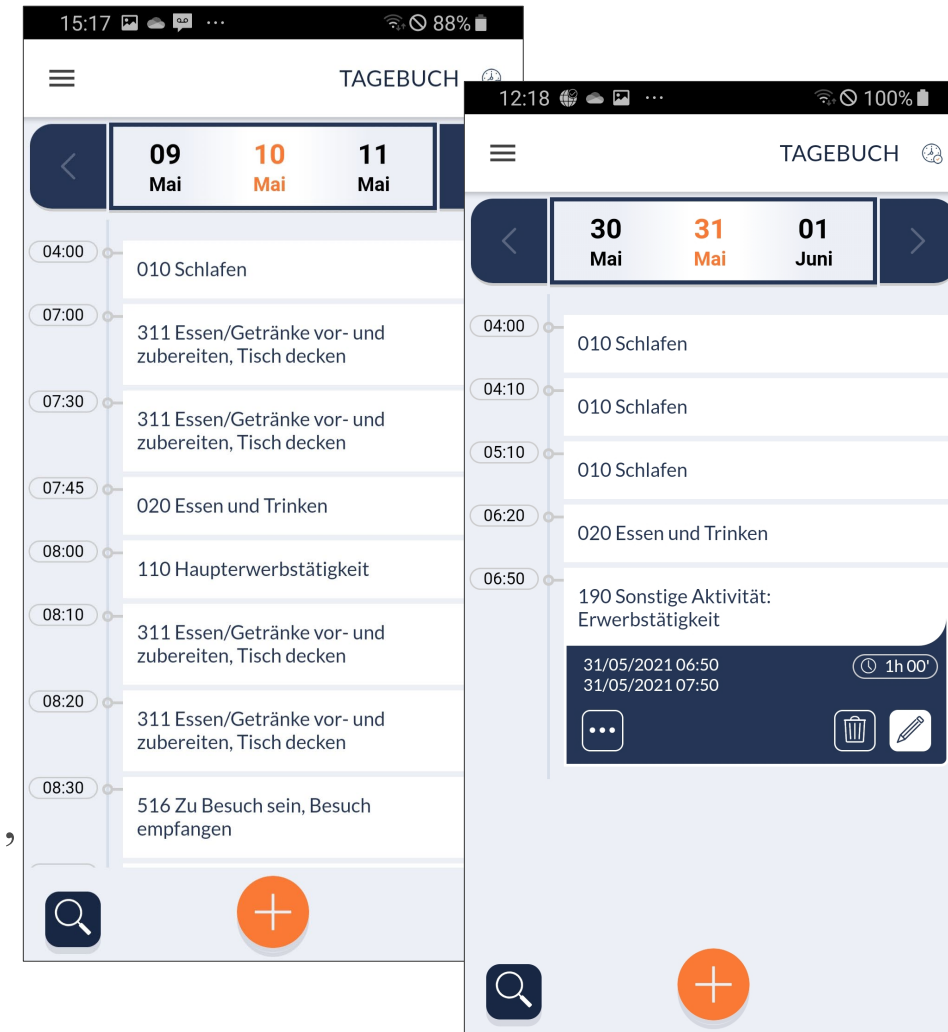
Would you like to **continue**
with the next **Part 3: XYZ?**

Close

Part 3

II. Diary: Overview

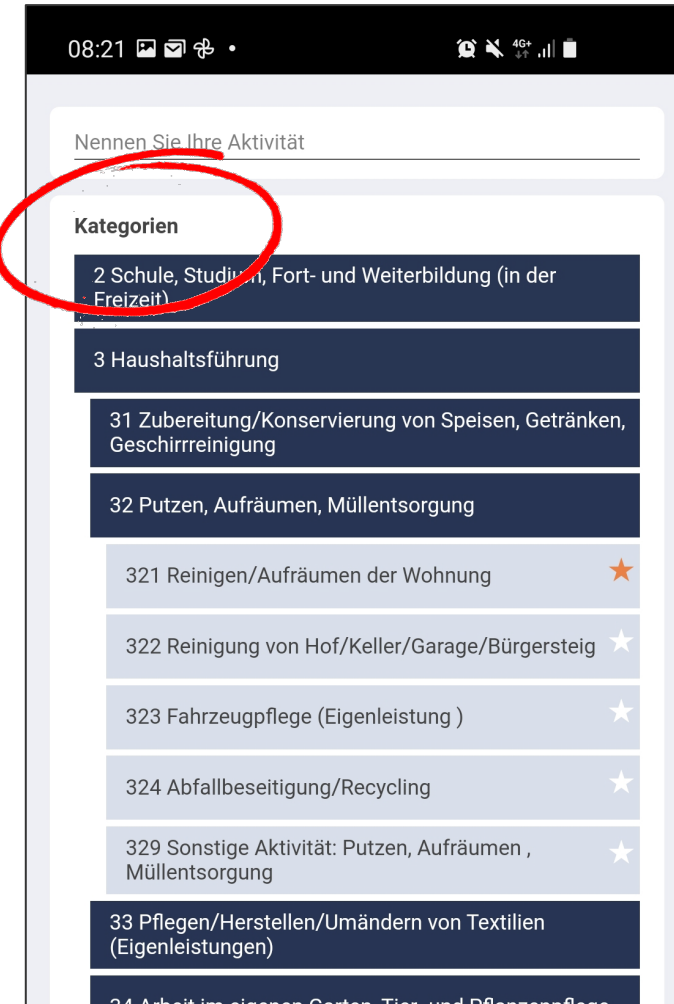
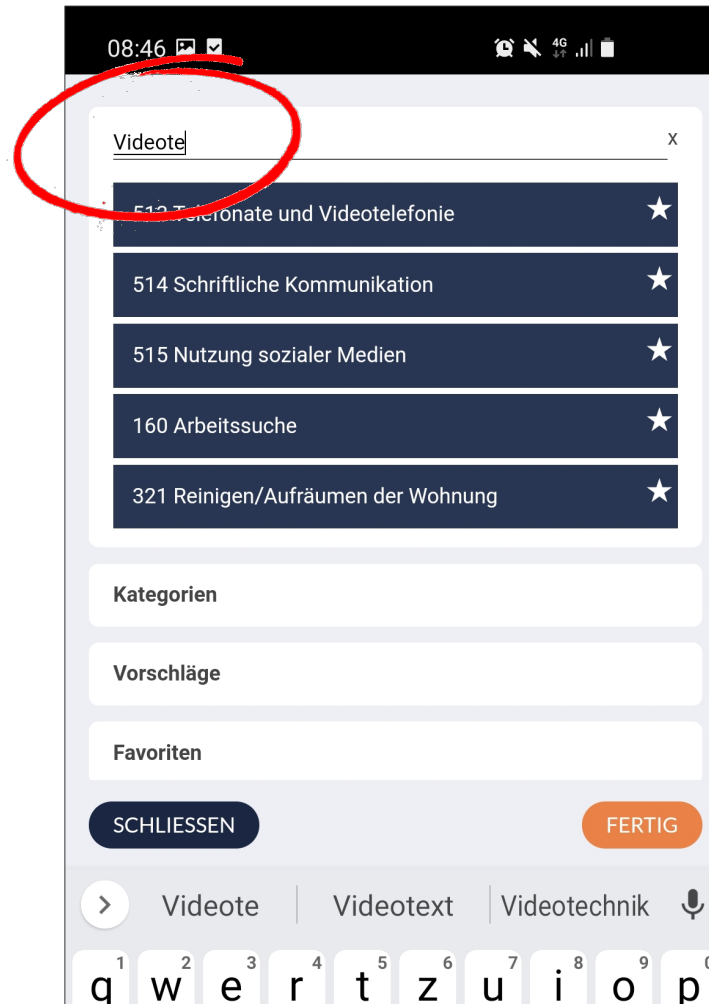
- » Simple design used
 - » No grid (as in paper), only main activity listed
 - » Clicking on an activity allows to view details & edit
 - » Prominent “Add” -button to track activities
- » Recommendations for the overview page:
 - » → List layout & edit implementation worked well
 - » → “Add”-button could be slightly larger
 - » → “Search” through all activities entered: Never used, can be removed for simplicity’s sake



III. Diary: Activity search

a. Categorical vs. free text search

» Two main possibilities:



III. Diary: Activity search

a. Categorical vs. free text search

→ Include both options, as they supplement each other

» Used both (exclusively) by Rs, both have pros and cons

» Text search:

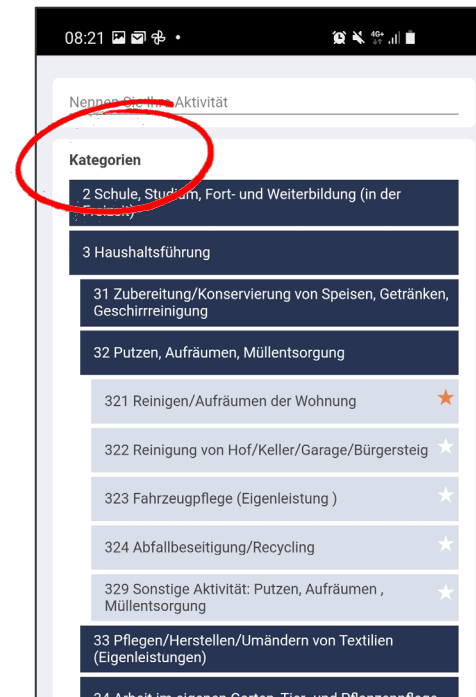
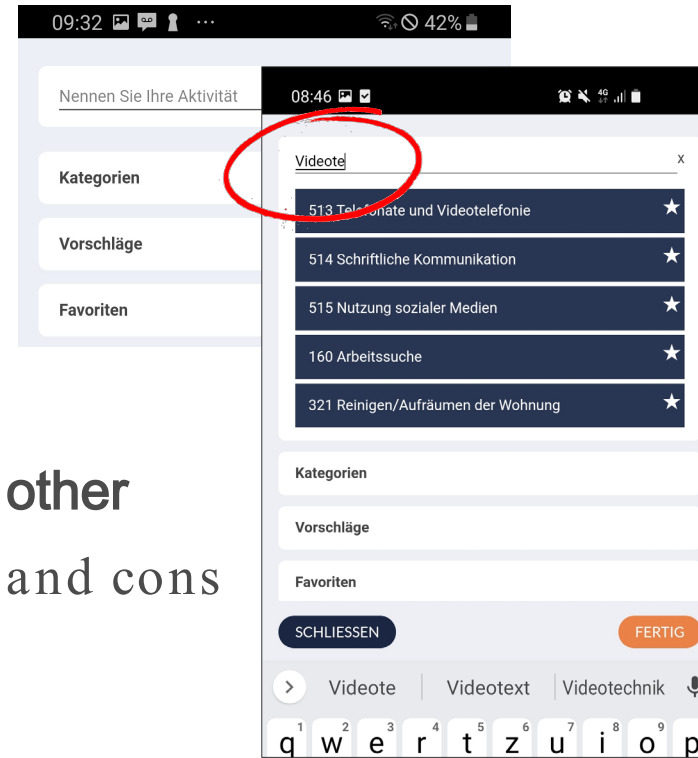
» In theory: Quicker & more intuitive to use

» But: Most Rs tried, but were dissatisfied w/ results and kept with the categorical search from then on

» Categorical (hierarchical) search:

» Gives guidance for required depth and detail

» Worked well all in all. Rarely, Rs got lost between the category levels
→ visually more distinct categories (& addition of a dropdown-arrow)

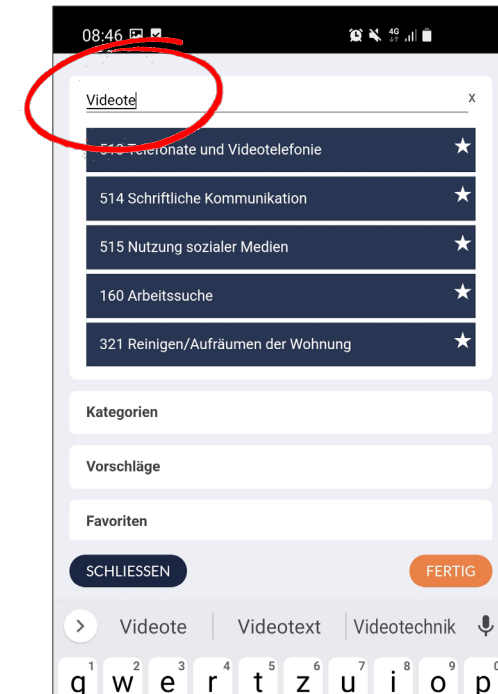


III. Diary: Activity search

b. Text search functionality

As the text search is in theory considered very useful, correct implementation is key:

- »» Few Rs actually didn't see it → make sure the search bar is visible!
- »» Dynamic search: Results should start being displayed while typing already, to get direct feedback about available activities
- »» Ensure reliable & fast backend: If search results update slowly, that can be a *very* frustrating experience
- »» Search algorithm:
 - »» include similar words (colloquial), ignore spelling errors, umlauts, accents & blank spaces after a search term
 - »» Practical: check for special characters, prone to crash an app (#, /, etc.)



VI. Additional recommendations

Be careful with „nice-to-have“-features

“Favorites” as an additional possibility to add activities

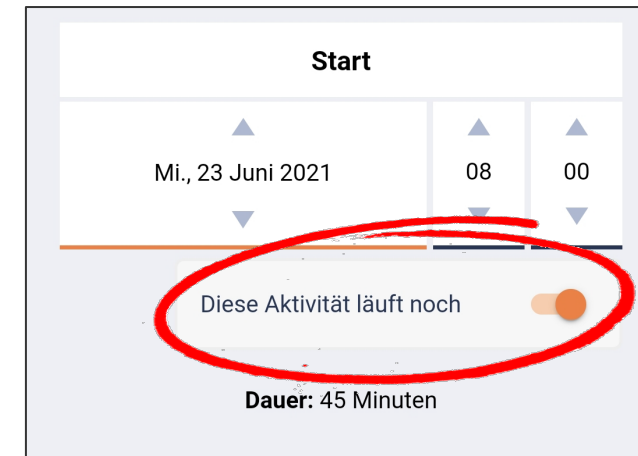
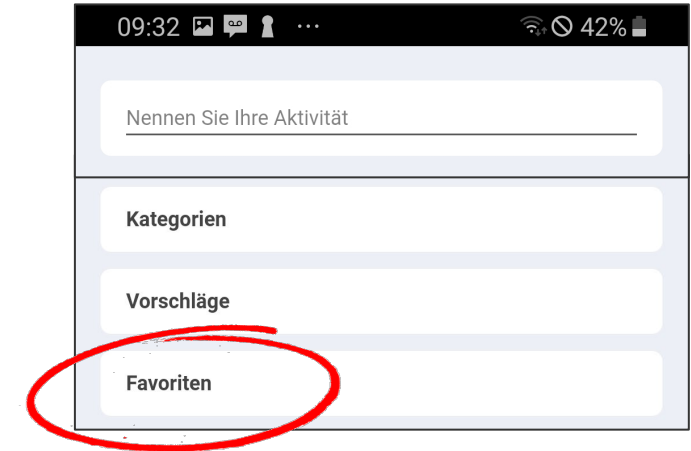
- » Was rarely used by Rs
- » Actually did more harm (irritation & frustration) than good

“Ongoing” : Slider to choose an ongoing activity, rather than add times

- » In theory useful, in field phase (severe) problems: Rs forgot about it, diary got locked after 2 days of “successfully” tracking activities

→ “When in doubt, leave it out ...”

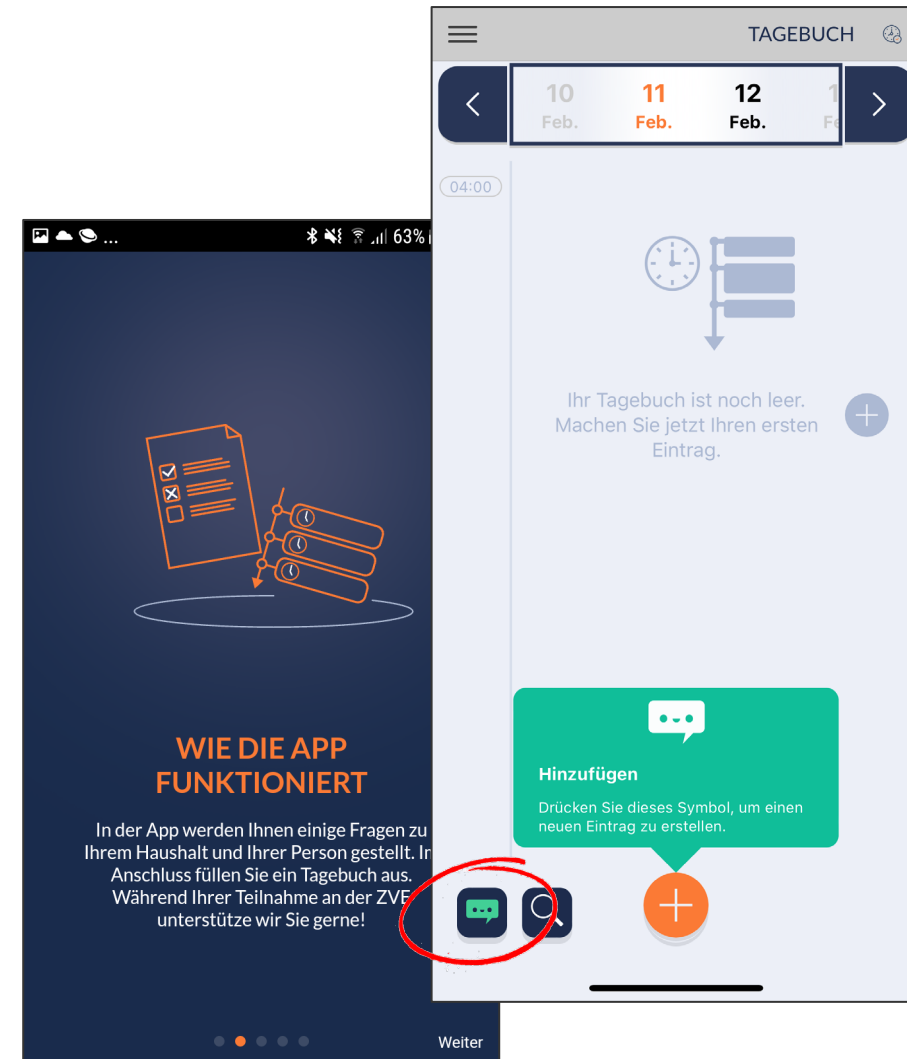
- » Keep it simple: Unless the diary runs for a long period, it might be more beneficial to leave out these more advanced features



VI. Additional recommendations

TUS is complex– implement an interactive Tutorial

- » We strongly advice to implement an interactive tutorial that guides users throughout the app
- » Should directly open up whenever a R enters a new page for the first time and introduce new features.
- » Right after login: Explain the structure (what to expect, how many parts there are, in what order, etc.)
- » Explain diary concepts & include examples (e.g. filled in diary)
- » Should be re-accessable via a clearly labeled button at any time throughout the survey, so Rs can re-open the help for a certain page



Conclusions

App to fill out the (whole) Time -Use-Survey can work well... BUT:

- » Guide users through the whole survey, from beginning to end
 - » Easy-to-follow structure, navigation, & diary view (interactive list of main activities)
 - » Highlight the next steps and prominently display main interaction points
 - » Inform users: Explain the survey process & the diary concepts with an interactive tutorial
- » Activity search function is key: Implement both a categorical & a text search, to meet different user types and provide a "backup" option
- » “Less is more”: Keep the design simple (features can do more harm than good)

Thank you!

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