Heuristic Evaluation of [Lessonly]

1. Problem/Prototype
Lessonly is a crowdsourced lesson planning and organization mobile app that creates an online community for teachers to share, discover and manage lesson plans.

2. Violations Found
1. [H4 Consistency and Standards] [Severity: 1] [Found by: A]
   When user searches "derivatives" and the result is displayed, derivatives is bolded and underlined making one think that it is clickable. Important words and key terms were always bolded and never underlined so I was led to believe this could be clicked. I suggest removing the underline feature to keep keywords consistently bold.
2. [H3 User control and freedom] [Severity: 3] [Found by: A, B, C]
   On task #1, the user click on the menu button to "create" a lesson. The first screen that asks for lesson objectives displays two buttons (left and right) at the bottom. However, when I tap the "left" button, I am taken to a screen I did not want to reach. I recommend removing the "left" button when coming from the "create" option of the sidebar. You could replace the "left" button with one that takes user to homepage (using the home icon).
3. [H3 User control and freedom] [Severity: 4] [Found by: A, B, C]
   When I start executing task #1 and halfway through and I decide to view my "menu" options again by clicking on the hamburger menu icon, I am taken away from my current screen forcing me to restart everything. I recommend making the sidebar menu be an overlay on top of the current screen so that user can easily come back to the current screen and continue or just change their mind and do something else from sidebar. In general there is no way to easily go home, the user must complete a task to do so.
4. [H6 Recognition rather than recall] [Severity: 2] [Found by: A]
   When creating a new lesson plan (task #1), the system seems to rely a lot on my own memory. From lesson objectives, materials and instructions, there is a lot to remember and at no point does the system allow me to know what I entered previously. I would use a vertically-scrollable view. That is, let the user scroll up/down in order to fill the relevant information or to view what they entered previously. You can use red asterisk (*) for required fields.
5. [H2 Match between system and the real world] [Severity: 3] [Found by: A]
   When I have entered the lesson objectives, materials and instructions, the system then asks me "Do you have any videos, songs or documents essential to this lesson?". Usually, in the real world, this question admits a "yes" or "no" answer when it is crucial for the user to simply choose from multiple options. I would have a prompt that says: "Upload media content", give the 4 media options to the user and a last one that says something like: "No media source to attach".
6. [H4 Consistency and standards] [Severity: 1] [Found by: A, B]
   When giving a summary of the user's input before completing task #1, there are several

inconsistencies with the positioning of the different sections and their content (content of instructions not on the same line as content of materials). I suggest making alignment consistent for the different sections (objectives, materials and instructions) and their respective contents too (content for objectives, materials and instructions should all be aligned).

7. [H8 Aesthetic and minimalist design] [Severity: 3] [Found by: A]
    On the summary screen that completes task #1, there are three items at the bottom that can be very confusing. There is no spacing that allows one to distinguish the different items and the media content seems out of place. I would make sure the media source occupies a row on its own and it should be big enough to easily tell whether it is a video, an audio file, an image or a pdf document. It should be above the other two buttons which I would remove since they don't intuitively say what their purposes are.

8. [H1 Visibility of system status] [Severity: 2] [Found by: A]
    When I click "create" lesson and give a name, there is nothing to inform me of whether the content was successfully created (was content too big? Is the upload happening asynchronously? Can I leave the app now?). The system lets you decide whether to share the item first before notifying of the lesson creation. I think there should be a small badge that appears for a few seconds upon tapping "Create" to inform the user of whether the upload has successfully finished, is in progress or has failed.

9. [H8 Aesthetic and minimalist design] [Severity: 1] [Found by: A]
    When executing task #3 (find a lesson), and that the user searches "derivatives", the user is presented with a result list that does not have minimalist presentation/structure. For example, the rating on each card is represented as a number out of 5 and there is the use of a star, which could each accomplish the same thing. I suggest just using stars that are filled to show the rating. In this case, a 4.5 should show 5 stars where all first 4 stars are filled and the last is half filled with a color that is consistent with the design.

10. [H8 Aesthetic and minimalist design] [Severity: 2] [Found by: A]
    When the user has clicked on one of the results from searching "derivatives" a card shows up with more details about the lesson. The card makes poor use of white space to convey more structure and content seem to be squeezed together. I would remove the card altogether to put all the content on the background container and display a button at the bottom that says "Add this lesson".

11. [H1 Match between system and the real world] [Severity: 1] [Found by: A, B]
    When the user clicks on the "+" button, a modal is displayed that blurs the background. This modal makes poor use of different icon buttons. Share button comes with the "upload" icon and Add button comes with the "calendar" icon. I would suggest using better icons for the button and make them appear distinct from the background container by adding some elevation or contour. You can find better icons using SVGs from sites like www.iconfinder.com. Should also match icons for attachments for lessons with the prompt - When creating a lesson on the screen titled "do you have any videos, songs, or documents," the icons underneath do not align with the order of the attachments. Would be more clear if the icons directly related to the words.

12. [H5 Error Prevention] [Severity: 2] [Found by: A]
    On the screen asking for the instructions for a lesson (task 1), no template is provided to users to ensure they can enter the same order list format (i.e. should instructions be numbered 1, 2, 3, etc. or should they be in bullet list). The current approach gives flexibility to user to use whatever they feel more appropriate, which could lead to users entering arbitrarily formatted instructions. I would make sure there are placeholders that follow a consistent listing system (i.e. put "1. " as a placeholder before the user enters first instruction, then "2. " before the user enters second instruction, and so on)

13. [H4 Consistency and standards] [Severity: 1] [Found by: A]
    When shifting from one page to another where you expect the "back" arrow-button to remain in the same position, you see that the positions are different. The same is true for the '+' and '-' buttons for adding a new lesson. This requires the user to pay closer attention to make sure it is the same back button. Make sure the (x,y) coordinate of buttons (including "back buttons") are always constant.

14. [H2 match between system and the real world] [Severity: 3] [Found by: A, C]
    For task #2, the sidebar shows "calendar", when in real life, one does not expect to view the calendar and then complete a lesson: "Lesson complete". There is no obvious relationship between viewing calendar content and completing a lesson. I would rename this section as "My lessons" and remove the calendar to simply show lessons with timestamps. When user clicks those lessons, they see further details and give feedback/reviews.

15. [H7 Flexibility and efficiency of use] [Severity: 1] [Found by: A]
    When I open the app for the first time, the landing page is a search bar with trending topics and a few suggestions. I think this is good for a new user who might be interested in knowing what are the options there. However, someone who has been using this app for a while will probably want to quickly view their saved lesson plans. It would be very easy for one to view the saved lesson and I suggest showing this information on the landing page too.

16. [H1 Visibility of system status] [Severity: 1] [Found by: B]
    After typing in Derivatives, it is not intuitive how to actually search for that. Adding some type of "search" clickable button of way to interact with the phone would help here.

17. [H4 - Consistency and standards] [Severity: 3] [Found by: B, C]
    When creating a lesson on the screen that says "would you like to share your lesson," there is a lack of consistency between the outline of the "make public" and "share" button. Would be better if these were both either completely different or more similar. It isn't clear that this button has to be selected like the share button does.

18. [H5: Error Prevention] [Severity: 1] [Found by: B]
    If you decide to "keep this lesson for myself" when creating a lesson, would help if there was some back button that can be used to undo this action or "are you sure" button, since choosing this option would slightly detract from the whole network of the app

19. [H5 - Error prevention] [Severity: 3] [Found by: B]
    The screen asking to share with others could be better formatted: It seems that "make public," "share" and "no thanks" are all valid options - but it is unclear if "make public"

and "share" are the same? Or if the user should click on just one of these options or multiple? I am a bit confused about what these different buttons actually do. Can either remove the "make public" button or reflect that it is toggle-able

20. [H3 - User control and freedom] [Severity: 3] [Found by: B]
There should be more steps to share lessons on this screen, or better support of undoing an action such as sharing in case this is an accident. Can also add more steps such as "Are you sure?" or "confirm" before sharing

21. [H4 - Consistency and standards] [Severity: 3] [Found by: B]
When going to calendar and clicking on a lesson, there is not much clarity regarding what hitting the "next" button means. Would help if there was instead a question such as "did you complete this lesson?"

22. [H3 - User control and freedom] [Severity: 2] [Found by: B]
If the next button is accidentally clicked when going to calendar and viewing a lesson, there should be some type of "back" button in case this lesson was not actually done yet. This would help avoid lots of steps in order to go back to the lesson plan

23. H10 - Help and documentation [Severity: 2] [Found by: B]
Would be helpful if when adding a lesson to the calendar, the app gave more instruction around what the user to do. Simply clicking on a date and immediately having a lesson added in calendar is a bit unintuitive. A help button or some additional information would make this process more straightforward

24. H3 - User control and freedom [Severity: 2] [Found by: B]
Having the same button to both view a date in the calendar and also add a lesson is confusing - would be more helpful with additional clarifications on how to do each of these actions (when coming from the calendar screen vs when searching for a lesson)

25. H2 - Match between system and the real world [Severity: 1] [Found by: B]
Allowing users to view different months would be a helpful feature, since I assume teachers would want to use this app for academic years/semesters

26. [H1: Visibility of System Status] [Severity: 2] [Found by: C]
The interface does show a message when a lesson plan is added to the user's calendar or when a lesson plan is made, however these messages are only shown for about 3 seconds then goes away. This is an issue because it does not allow the user to digest the information to know what happened.
Fix: Have the messages of system status last until the user clicks on the screen for it to go away, so the user can read the system status message at their own pace.

27. [H3: User Control & Freedom] [Severity: 3] [Found by: C]
The interface does not have back arrows at every step where a user might want to go back. Specifically, in the create a lesson plan process, there are back arrows until the user hits the create button and names their lesson plan, where once the user is on the final step of sharing their lesson plan, there is no way to go back and revise any previous information. This is an issue because there should user control and freedom to go back a screen and fix any issues.
Fix: Add back buttons at every step where a user has to select options, specifically for the above case, back button on the sharing screen.

28. [H4: Consistency & Standards] [Severity: 2] [Found by: C]
The interface does not have consistent coloring for what objects are interactable or
necessitate the user to interact with. Specifically, some of the boxes are highlighted with
a tint of blue and purple, such as in the create a lesson plan screens, but at the sharing
a lesson screen, the "make public" button and "share with groups" do not have the blue
and purple coloring to show that they are interactable like the previous screens. This is
also seen in the browsing of lesson plans screen, where the lessons plans do not have a
colored border to show interactability. There is also a clash with this coloring where the
"Make Public" button is a toggle button, but shows the black border, and when clicked on
turns into the blue and purple border, which is misleading to have as a toggle button.
This is an issue because a user may get confused on what is interactable because of the
inconsistent use of the blue and purple coloring.
Fix: Make all boxes have the same coloring that are interactable or have the coloring of
boxes represent what action the user should take.

29. [H5: Error Prevention] [Severity: 2] [Found by: C]
The interface does not require the user to input text into the textboxes for creating a
lesson plan (specifically starting on the "what are the lesson objectives" screen), and
allows the user to simply hit the next arrow on the bottom right to continue to the next
step. This is an issue because there is no error prevention of allowing the user to simply
not input texts for these key fields in creating a lesson plan.
Fix: Require the user to enter in text to these text fields when creating a lesson plan by
not allowing the user to continue without entering in text, and provide an error message
if attempted or give instructions so this does not happen.

30. [H8: Aesthetic & Minimalist Design] [Severity: 1] [Found by: C]
The interface has different sized clickable boxes on the home screen (e.g. "Top Picks for
you", "Your Favorites", etc), and I wonder why the left column of boxes are sized
differently than the right column. This may be an issue because it may confuse the user
as to whether the topics with a larger sized box will either be more important or contain
more information, which would be misleading.
Fix: Have all the boxes under the search bar on the homescreen have a similar
structure/sizing.

31. [H8: Aesthetic & Minimalist Design] [Severity: 1] [Found by: C]
The interface lacks some clarity on the screen after searching for a topic (the screen
where it shows the different lesson plans for the queried topic). Specifically, there is a
lack of color, which contrasts the homescreen, which had an abundance of color for the
buttons, however the buttons on this screen do not have any color other than a vague
border, which makes it hard for the user to know that these buttons are clickable.
Fix: Add color or a stronger border to the buttons on selecting a lesson plan page.

32. [H10: Help & Documentation] [Severity: 1] [Found by: C]
The interface does not contain any form of help menu to teach the user what each
button does, specifically in the hamburger menu. This is an issue, because without some
form of guidance or help, the user may not want to use this app because they cannot

complete the task that they want to do.

Fix: Include a tutorial and a help button in the hamburger menu.

3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of Status	0	2	2	0	0	**4**
H2: Match Sys & World	0	1	0	2	0	**3**
H3: User Control	0	0	1	3	1	**5**
H4: Consistency	0	3	1	2	0	**6**
H5: Error Prevention	0	1	2	1	0	**4**
H6: Recognition not Recall	0	0	1	0	0	**1**
H7: Efficiency of Use	0	1	0	0	0	**1**
H8: Minimalist Design	0	3	2	1	0	**6**
H9: Help Users with Errors	0	0	0	0	0	**0**
H10: Documentation	0	1	1	0	0	**2**
Total Violations by Severity	**0**	**12**	**10**	**9**	**1**	**32**
Note: check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)						

4. Evaluation Statistics

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C
sev. 0	0% (0/0)	0% (0/0)	0% (0/0)
sev. 1	50% (6/12)	42% (5/12)	25% (3/12)
sev. 2	40% (4/10)	30% (3/10)	30% (3/10)
sev. 3	44% (4/9)	56% (5/9)	44% (4/9)
sev. 4	100% (1/1)	100% (1/1)	100% (1/1)
total (sev. 3 & 4)	50% (5/10)	60% (6/10)	50% (5/10)
total (all severity levels)	47% (15/32)	44% (14/32)	34% (11/32)

**Note that the bottom rows are *not* calculated by adding the numbers above it.*

5. Summary Recommendations

Overall, the main issues we found were related to flexibility moving between screens without having to restart a task every time. We also noticed that there were some confusion among the meanings of buttons and inconsistencies of style. Adding back buttons to prevent users from having to go through many steps at different points of using the app and more descriptions about how to execute tasks would help users more easily use Lessonly.

Based on the violations we saw, one trend we would recommend looking at would be to make sure that the interface allows user control and freedom through making sure each screen has back arrows and a way for the user to access the home screen at all points (from the hamburger menu). Another trend is to make sure that the interface aesthetic is consistent, specifically for the color pallete in the browsing of lesson plans screen, the sizing of the boxes underneath the search bar on the homescreen, and the border coloring for interactable buttons.

Finally, it would be useful to have on the top-right side of the header, an icon that links to the "create" section. We assumed that, if users don't publish notes often, then there will be less results to display when they search meaning that it could be hard to retain users. We would like Lessonly to focus on balancing the demand and supply of lesson plans as they move on to the Hi-Fi prototype.

Severity Ratings

0 - don't agree that this is a usability problem
1 - cosmetic problem
2 - minor usability problem
3 - major usability problem; important to fix
4 - usability catastrophe; imperative to fix

Heuristics

H1: Visibility of System Status
- Keep users informed about what is going on

H2: Match Between System & Real World
- Speak the users' language
- Follow real world conventions

H3: User Control & Freedom
- "Exits" for mistaken choices, undo, redo
- Don't force down fixed paths

H4: Consistency & Standards

H5: Error Prevention

H6: Recognition Rather Than Recall
- Make objects, actions, options, & directions visible or easily retrievable

H7: Flexibility & Efficiency of Use
- Accelerators for experts (e.g., gestures, kb shortcuts)
- Allow users to tailor frequent actions (e.g., macros)

H8: Aesthetic & Minimalist Design
- No irrelevant information in dialogues

H9: Help Users Recognize, Diagnose, & Recover from Errors
- Error messages in plain language
- Precisely indicate the problem
- Constructively suggest a solution

H10: Help & Documentation
- Easy to search
- Focused on the user's task
- List concrete steps to carry out
- Not too large