How to Play UNO

Project Objectives
After watching the class lecture on Bloom’s taxonomy and reading David Kratwohl’s article “A Revision of Bloom’s Taxonomy: An Overview” multiple times, I understood the differences between the original and revised taxonomy, but I did not understand how to put the revised taxonomy in practice. After the in-class exercises, I decided that I needed additional practice because my answers did not match my classmates. As a result, my learning objective for this project is to find an approach for selecting the appropriate cognitive process dimension and knowledge dimension for a given learning objective. Once this approach is in place, I hope to feel more confident in my selections since it would be grounded in a process.

Method
To begin this assignment, I copied the “What to do” section of the project description and pasted it into a Word document. This became my checklist. I chose the topic “How to play UNO” because of the varied approach to playing the game: a player could simply play according to the rules and hope to be lucky enough to get a set of cards in their favor, or a player could play strategically based on their cards and their competitor’s actions. For that reason, I anticipated that I could develop objectives that span the taxonomy grid. Likewise, I could teach the class in increasing complexity, from concrete knowledge (basic rules) to abstract knowledge (strategy). I could divide the class into five modules:

1. Basic rules, objectives, how the action cards work
2. When it’s your turn: which card should you play, which card should you discard
3. The points system: card values, keeping points in mind during gameplay
4. Making decisions based on your competitor’s actions
5. Other strategies and tips

Before taking this class, I expect the learner to know how to do the following:

- Shuffle and deal a deck of playing cards
- Understand the concept of clockwise/counterclockwise direction
- Recall addition facts, sums to 18 (this will help with quickly totaling card points)
- Group by color, number, suit
- Familiarity with Crazy Eights card game (helpful, but not required)

Once I got to item E (describe your learning objectives or outcomes in regular English), I began to slow down. Not only has it been years since I’ve played UNO, but I regularly play Phase 10, which also falls in the Crazy Eights category but with different rules. Realizing that I was mixing up the games, I played a couple of rounds of UNO with a friend to refresh my memory, and I jotted down concepts that a learner would need to understand. Afterwards, I came up with six learning objectives.

From there, I moved on to item F (translate to revised Bloom’s taxonomy), beginning with reviewing the Bloom Definitions PDF that we used during the in-class exercise. After a Google search on “revised Bloom taxonomy exercises,” I came across the article “Creating Meaningful Objectives” by Katherine Miller. When developing objectives based on the revised taxonomy, Miller suggests...
determining the knowledge dimension first and then deciding “what do you want students do with that knowledge [...] remember, understand, or apply that knowledge?” I approached my six objectives this way, finding the knowledge dimension first and then assigning the corresponding cognitive process. After I wrote out the revised objectives, I removed one of them because it was too similar to two others. I plotted the remaining four in the table and then created the fifth objective. As a final step, I wrote out the explanations for each objective.

Results
(see following page)
# Learning Objectives (or Outcomes)

<table>
<thead>
<tr>
<th>English</th>
<th>Revised Bloom’s Taxonomy</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>Understand basic game rules, objectives, purpose of the action cards, and points system</td>
<td>1: Recall (1.2) the basic game rules, objectives, purpose of the action cards, and points system. (Ca, knowledge of subject-specific skills and algorithms)</td>
<td>For this objective, I debated on whether I wanted the learner to remember the rules or understand the rules. Ultimately, I decided that the first objective should focus on storing the game rules in the learner’s long-term memory. Their understanding of the rules will be explored in subsequent objectives.</td>
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<tr>
<td>Know when a player has made an illegal move according to the rules.</td>
<td>2: Identify (1.1) when a competitor has made an illegal move according to the rules. (Ab, knowledge of specific details and elements)</td>
<td>I came up with this objective after plotting the other four in the table. I created this one in particular because I felt that the learner needed another simple objective around the rules.</td>
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<tr>
<td>When it’s your turn, be able to assess which card in your hand is the best one to play (there may be multiple options)</td>
<td>3: Judge (5.2) which card you should play based on the cards in your hand. (Cc, knowledge of criteria for determining when to use appropriate procedures)</td>
<td>I knew that this objective was an evaluate cognitive process, but I didn’t know whether which card you should play based on the cards in your hand was procedural knowledge or meta-cognitive knowledge. Though “in your hand” sounds like self-knowledge (meta-cognitive), I decided that this objective was more about the knowledge to determine what to do based on the current situation (procedural).</td>
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<tr>
<td>Learn how to refine your strategy based on your competitor’s actions: the cards they’ve played, the cards they’ve discarded, how many cards they have remaining</td>
<td>4: Execute (3.1) gameplay based on your competitor’s actions: the cards they’ve played, the cards they’ve discarded, how many cards they have remaining. (Da, strategic knowledge)</td>
<td>Now that the learner knows the basic rules and can demonstrate their ability to play, I wanted to create a more abstract objective. Thus, the learner should know how to watch their competitor (strategic knowledge) and then play (execute) their moves accordingly.</td>
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[Original] Play the game with a points-based strategy

[Rewrite] Learn the difference between an offensive or defensive strategy and when to use which

5: Compare (2.6) the tactics used in an offensive strategy and defensive strategy. (Cb, knowledge of subject-specific techniques and methods)

This objective was originally focused on knowing how to play for points, but I realized after playing a few practice rounds that your gameplay changes depending on the quality of your hand. If you have a good hand, then you can play offensively, holding on to your action cards until you are about to bid out. However if you have a bad hand, then you want to play defensively, discarding your action cards as quickly as possible so that you are not left with these high-value cards when someone else bids out. Therefore, I changed this objective’s focus to comparing the strategic tactics for offensive play and defensive play.

<table>
<thead>
<tr>
<th>Knowledge Dimension</th>
<th>Categories</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>A Factual</td>
<td></td>
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<tr>
<td>B Conceptual</td>
<td>2</td>
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<tr>
<td>C Procedural</td>
<td></td>
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<tr>
<td>D Metacognition</td>
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</table>
Discussion

In this section, I discuss the results of my learning objectives within the framework of the reflection questions. I also include points that I found problematic.

Did your objectives span multiple cognitive process types? Should / could they have? (If you wanted to include other processes, could you do so?)

I have a total of five objectives. Four of them fall under the procedural knowledge dimension, which I think is expected considering the domain. There are objectives in each of the cognitive process dimensions except for Analyze and Create. I considered an objective for the Create dimension, such as designing a one-page cheat sheet of the rules, but I don’t think that a learner would be comfortable doing this after only one class.

I mentioned in the Method section that I initially had a sixth objective. While translating the objectives, I decided to remove the objective “Know the purpose of each action card (Draw Four, Draw Two, Wild, Skip, Reverse) and when to play them” because it was redundant with other objectives. The first part “know the purpose of each action card” was already covered in Objective 1 (recall the basic game rules) and the second part “and when to play them” was already covered in Objective 2 (judge which card you should play). I created a new objective, “identify when a player has made an illegal move,” which gave me my only objective in the Factual knowledge dimension.

How difficult was the translation process? Did your English description map easily to the terms used in the Taxonomy? Did you find it required significant inferences (as in the case of “editing”)?

I found the translation process difficult because I wasn’t sure where to begin. It wasn’t until I found the “Creating Meaningful Objectives” article that I began to develop a good handle on the process, as it provided a detailed approach, along with good and bad examples. I also liked that the verbs were included in each of the respective cells (see chart below); it was easier for me to deduce the correct knowledge and cognitive dimensions when I had the available verbs within the same matrix. However, the chart soon became problematic when I realized that the verbs presented in it did not match the verbs in the Bloom Definitions PDF. In addition, it did not include the Meta-cognitive knowledge dimension. As a result, I continued to follow the advice of defining the knowledge dimension and then the cognitive process dimension, but I otherwise had to abandon the resource.
Unfortunately, my challenge to determine the appropriate verb is still unresolved. For Objective 2 (Judge which card you should play based on the cards in your hand), I really wanted to use “Determine” instead of “Judge.” Since “Determine” is not listed in the chart, I’m not sure if that meant that it’s not a good verb, or if this is not a finite set of verbs. Likewise, I found the list of available verbs for Apply to be fairly limiting.

Another point of frustration was that I could not find any examples of the knowledge categories beyond the ones that we have already seen (e.g. technical vocabulary and musical symbols are examples of “knowledge of terminology”). I felt better about selecting the appropriate knowledge dimension, but I needed more examples of the categories within said dimension.

Despite these challenges, I did a good amount of editing between the regular English objectives and the revised Bloomian objectives. I think that the resulting objectives are stated more succinctly.

One of the goals of Bloom’s taxonomy is to make it clear how you would assess if the objectives were met. Is it clear how you would assess yours? If so, how? If not, why not?

I think that most of the objectives could be assessed through a quiz after the class. For example, you could have multiple choice or true/false questions to test Objectives 1, 2, and 5. Objectives 3 and 4 would be harder to assess since there is no definitive right or wrong answer. If a person is reviewing the answers, then you could set up essay questions, presenting hypothetical situation sand having the learner present and justify their answers. If a machine is evaluating the answers, then you could present the same hypothetical situations, but have the learner select all of the possible correct answers.

Conclusions and "Future Work"

Overall, I think that I’ve achieved my objective to find an approach for this exercise. I like defining the knowledge dimension first and then determining what I expect the learner to do with this knowledge, and I would continue to follow this process in the future. However, I am still not as confident as I would like to be in determining the appropriate cognitive process dimension or knowledge dimension. This is mostly due to a lack of clarity: understanding whether the list of verbs in the Bloom Definitions PDF is finite, and having access to more examples of the knowledge category. Once this is confirmed, I would like to place the available verbs in the taxonomy chart, similar to what Miller has done in her example.

References

