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Section 104-60

Project 4: Energy Efficient Bread Toaster

TOPIC: Customizability

**Overview:** This document will serve as your team’s database of research. It is a living document meaning it will be edited and revised throughout the semester. After you have each completed the individual component, your team will create a master database incorporating all research.

**Research Table (3 Sources)**

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| Ruotolo, F., Kalénine, S., & Bartolo, A. (2020). Activation of Manipulation and Function Knowledge During Visual Search for Objects. *Journal of Experimental Psychology: Human Perception and Performance*, 46(1), 66-90. doi: 10.1037/xhp0000696 | | |
| Evaluation  Is the source reputable? | Credibility:  [ √] High [ ] Medium [ ] Low | The article was from a peer reviewed journal. The information is still current as the article just came out in 2020 of January. |
| Relevance:  [ ] High [√ ] Medium [ ] Low | It is medium relevance as they used a lot of references for the article. Some of the references go back as to the 1990s. This relates to my research topic as I’m looking into how we will change the design of the toaster |
| Authority:  [ ] High [ √] Medium [ ] Low | I say the authority is medium as two of the authors were affiliated with the Sciences Cognitive et Sciences Affectives in University of Lille and one of them is also affiliated with the University Institute of France. It does not show any affiliations for the last author. The URL does not contain a ~. |
| Purpose:  [ √] High [ ] Medium [ ] Low | The authors do not seem to be biased. There are no ads or direct links to products. |
| Evidence  What information, facts, figures etc., may be helpful for my project? | Visual Word Paradigm (VWP) | “When participants are delivered with the name of a target object and have to find in a visual display the corresponding picture of object among distractors, they look more to the distractors that are related in some ways to the target than to the unrelated distractors” (Ruotolo, F., 2020). |
| Function Knowledge | “The term function knowledge usually refers to the goal achievable by using an object” (Ruotolo, F., 2020). |
| Keyword(s) (ex. User Interaction, Portability) | “Results from this study highlight the importance of controlling for visual similarity” (Ruotolo, F., 2020) |
| Summary | The article states that when it comes to pointing out an object, people rely on the known aspects of said object. Either it being the exterior of the object or how it is used. | |
| Analysis | This can be applied to our project as we are dealing with a bread toaster, a device that for the most part, many people have an idea of how it works and how it looks. So with this article we can aim to change the device but we should not go to far as people still have a view on what a bread toaster is and what it should look like. | |

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| Barbieri, N., &Palma, A. (2017). Mapping energy-efficient technological advances in home appliances. *Energy Efficiency*, 10(3), 693-716. doi: 10.1007/s12053-016-9470-7 | | |
| Evaluation  Is the source reputable? | Credibility:  [ √] High [ ] Medium [ ] Low | The article was from a peer reviewed journal. The information is still current as the article was published online the 2017 of June. |
| Relevance:  [ ] High [ √] Medium [ ] Low | It is medium relevance as they used a lot of references for the article. The earliest reference comes from the 1980s. The grammar is spelling is correct It deals with what the main goal of our project is for. |
| Authority:  [√ ] High [ ] Medium [ ] Low | The first author is affiliated with the Department of Economics and Management, University of Ferrara and SEEDS ( Sustainability Environmental Economics and Dynamics Studies). The second author is affiliated with IEFE, Bocconi University and Faculty of Economics, University of Rome. |
| Purpose:  [ √] High [ ] Medium [ ] Low | The authors are not biased in their report. There are no direct links on this page. |
| Evidence  What information, facts, figures etc., may be helpful for my project? | Energy Efficiency (EE) | “EE is the relationship between the output and the energy consumed to produce it, often called energy service”(Barbieri, N., 2017). |
| Energy Consumption | “In this setting, the contribution of technical change for increasing the efficiency of energy-intensive devices is key to reducing the electricity consumption in the residential sector”(Barbieri, N., 2017). |
| Self-Organizing Maps | “SOMs are based on unsupervised learning processes able to map every dimensional observation in a spatial grid”(Barbieri, N., 2017). |
| Summary | This article deals with making a dishwasher, refrigerators, and washing machines more energy efficient. They speak on methods of monitoring and measuring the energy usage. | |
| Analysis | This article can be applied to our project as we are also dealing with a kitchen appliance. Making other devices energy efficient should also help with making out toaster energy efficient. | |

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| Lyudmirsky, Y. G., & Assaulenko, S. S. (2018). Repairing the main shaft of dryer toast. *Vestnik of Don State Technical Universty*, 18(3), 311-317. doi: 10.23947/1992-5980-2018-18-3-311-317 | | |
| Evaluation\*  Is the source reputable? | Credibility:  [ √] High [ ] Medium [ ] Low | The article was from a peer reviewed journal. The information is still current as the article was published online in 2018. |
| Relevance:  [ ] High [ √] Medium [ ] Low | It is medium relevance as they used a lot of references for the article. The earliest reference comes from the 1970s. It deals somewhat with my project. |
| Authority:  [ ] High [ √] Medium [ ] Low | Both of the authors are affiliated with Don State Technical University. The URL does not contain a ~. |
| Purpose:  [√ ] High [ ] Medium [ ] Low | The authors are not biased in their report. There are no direct links on this page. |
| Evidence  What information, facts, figures etc., may be helpful for my project? | Issues | “Failure of machines is often due to the negative impact of structural, technological or operational factors”(Lyudmirsky, Y. G., 2018). |
| Constructive Method | “The constructive method involves the installation of additional parts that compensates for the lack of strength, and provides a decrease in stress concentration in the most loaded areas”(Lyudmirsky, Y. G., 2018). |
| Summary | The article deals with fixing the main shaft of a toaster. It goes to explain the procedures to accomplish this. | |
| Analysis | It can be resourceful to our project as it is possible that to make sure nothing breaks, we know of past mistakes. Knowing those mistakes, we can then work upon them so they do not occur again. | |