

Creating Eco-Activist Platform Utilizing Interactive Media.

“Eco-Flow”: Creating Eco-Activism in the 21st Century

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Abstract

This literature review identifies environmental communication platforms and message frameworks that utilizes and combine social media, interactive web applications, and interactive documentaries to influence positive, long-term environmental behavioral changes in the 21st century. Environmental messages should carefully construct textual, tonal and interactive components with the use of traditional environmental learning theories, such as social learning theory and free-choice theory to create “Flow” or “Eco-flow” in the message receiver.

Future environmental platforms should aim to turn passive viewers into active users through locally focused messages on interactive, multifaceted platforms that induce participation online and in the physical world. In the past decade, interactive documentaries such as “18 days in Egypt” and a “World Without Oil” have surfaced as a useful communication tool in generating social and environmental action and long-term positive behavioral changes. Experimenting with and researching these modern communication avenues is essential in expanding the environmental community in the new millennium.

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Introduction

Environmental research shift: Science to Social

Environmental literacy has come a long way since scientist John Tyndall discovered carbon dioxide's heating atmospheric properties and defined "the greenhouse effect" in the mid 18th century (Hulme, 2005). In the 19th century society was reluctant to come to terms with concerns around increased carbon dioxide from the industrial revolution. For nearly a century mainstream society rejected scientific reports, such as disregarding scientific reports such as Callendar's 1938 discovery that carbon dioxide was increasing global temperatures and oceanographer Roger Revelle's 1956 discovery that our oceans could not absorb the increased levels of carbon dioxide (Revelle, 1956).

Understanding the past, present and future of environmental communication is essential in creating messages and platforms that influence long-term behavioral changes. The extensive evidence behind issues such as climate change has influenced the growing public concern, as well as validated the need for action. It's the role of movement leaders to take the half century of scientific data and formulate it into strategic communication plans to influence pro-environmental behaviors.

In a time of hyper expansion in communication technologies such as social media, web applications, and interactive documentaries, enhancing communication is now a predominant area of study in the environmental scientific community. Exploring more effective ways to convey messages across these platforms, as well as create platforms specifically designed for eco-centered communication is vital in

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educating, engaging communities, and influencing behavioral changes in the 21st century.

In the past decade, an influx of social media studies has surfaced suggesting its ability to educate and engage a community around an environmental or social issue. However, speculation to the effect social media has on actual action for an issue is subject to debate. Terms such as a “click-to-activism,” “slactivism,” or “armchair activism” have been coined by researchers to illustrate the illusion of action social media campaigns create (Yu-Hao et al, 2013).

Social media’s effective educational and community engagement features have been combined with interactive web applications such as “HotDish,” and “In the Dark” to supplement environmental action. Traditional documentary storytelling techniques have converged with social media and web applications to create a new form of documentary, called interactive documentaries, which provide an interactive avenue of participation in the flow of environmental communication. The high level of effectiveness in these new hybrid interactive platforms, as seen in projects such as “18 Days in Egypt,” and a “World Without Oil,” suggest combining these new communication technologies to evolve a “viewer” into a “user” by prompting participation within the platform.

The lack of general exploration in combining these fields prompted this literature review, specifically the examination of effective message and platforms within these communication frameworks. Unlocking the strategic communication formula that seamlessly educates, engages a local community, and influences

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positive long-term environmental behavioral changes is the environmental community's biggest hurdle moving into the 21st century.

Environmental Message Framework

The construct of environmental issues is complex, often intertwined with various political, social, and economical factors that make it an overwhelming and discouraging subject with which to become involved. Understanding the basic principles of an effective environmental message is essential in creating an environmental communication framework. The multifaceted nature of environmental topics lends itself to certain learning theories to engage environmental message receivers.

Free-choice and social learning theory are two learning frameworks often identified in environmental education because these theories prompt individuals to choose their areas of interest, and to learn along with a group of peers (LoveJoy 2012). It's important to understand these basic learning principles before applying them within interactive communication platforms such as social media.

The free-choice learning theory suggests that individuals have a heightened sense of learning when they choose what, when, where, and how they are learning (Faluk et al., 2007). According to the free-choice theory it is more effective for environmental advocacy groups to offer multiple environmental topics with multiple avenues of gathering information and options of participation (Dierking 2007, Robelia 2013). Unlike platforms with singular forms of engagement, multiple

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avenues of engagement allow individuals to customize their level of participation and contribution to a specific cause.

Social learning theory acknowledges the importance of group learning within social situations and can be used in environmental communication campaigns to create collective guilt within a social group, to ultimately influence an individual's environmental behavior (Ferguson et al, 2010). The social learning theory is valuable to environmental message framing because it suggests addressing real life problems, in social settings, within personal social networks, and with multiple avenues of participation.

Combining the flexibility associated with the free choice learning theory and the social context attributes of the social learning creates the perfect environmental education framework. The framework should educate potential activists through various media platforms about several issues to engage a broad audience. Education and information transfer is the first step in to engaging an individual and creating "Eco-Flow".

Utilizing "Eco-Flow"

There is a growing concern for "online activism" turning into "slacktivism," or "armchair activism," because of recent research suggesting that online platforms don't in fact create action in the real world, but instead create the illusion of action. (Corner 2011, Kristofferson 2013, Yu-Hao 2013).

To avoid "slacktivism," communication strategist can use the principles of flow to create eco-activism, and thus "Eco-flow." Flow is defined as an "autotelic" or self-motivating experience characterized by intense focus, merging action and

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awareness, loss of reflective self-consciousness, distortion of temporal experience, and the experience of intrinsic reward (Sherry 2004).

The messages within a platform, and a platform structure can use “eco-flow” to create environmental action and long-term environmental behavioral changes by creating organic, intrinsic urges to change personal environmental behaviors.

“Eco-Flow” is modeled around previous environmental communication study which define three distinct stages to creating eco-activism. The three stages are first to educate, then to engage a community, and finally to facilitate action (LoveJoy 2012). The three steps of “Eco-Flow” were identified in an in-depth study where activists created eight distinct sections of their use for Facebook : seeking information, checking on others, appealing for donations, calling for volunteers, posting for civic messages, promoting events on social issues, holding discussions and scheduling. (Warren. 2014). The sections created in this study suggest the first steps of Eco-flow (education) rely heavily on the properties of the message and were obtainable through social media. The second and third stages of “eco-flow”, community engagement and eco-action rely heavily on the factors surrounding the message such as the issue itself and the platform.

This literature review dissects the “eco-flow” framework to provide future environmental communication campaigns with a formula to create effective messages and platforms in the 21st century.

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Social Media in Eco-advocacy organizations

Social media have surfaced as valuable tools for creating activism in various social and political environments across the globe in the past half-decade with instances such as the the Kony 2012 viral video, and the uprisings in Egypt, Ghana, and Hong Kong (Bokor 2013, Wong 2012, Dastagir 2014).

Social media use is essential in influencing younger age groups. Online social networking has been identified as the most popular leisure-time, computer using activity among young Americans with almost three quarters of American teenagers engaging in online social media (Rideout et al, 2010). Many of these social media users are already participating in online activism, as reports indicate 37% of Internet users aged 18-29 use their blogs or social networking sites as a venue for political or civic involvement (Lenhart 2009).

Social media played a crucial factor in putting together the largest climate change activist march to date, known as “The People’s Climate March” in New York City on September 21st 2014 (Foderaro, 2014). An environmental advocacy organization, 350.org, facilitated over 1,500 organization partners and over 400,000 march participants in New York City for the “The People’s Climate March” as well as over 2,100 other events in 160 countries in the same weekend around the world (Foderaro, 2014).

The use of social media trend seen in 350.org is evident in other advocacy organization as well. One research study (GUO 2013) of 188 advocacy organizations

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indicated use of social media outlets such as Twitter (80%), Facebook (87%), and YouTube (72%) to educate, engage, and facilitate environmental activism. While social media's presence is well documented in educating and engaging a community, not all studies suggest its effectiveness in creating action in the physical world.

Creating an Environmental Message:

Various factors should be considered when creating an environmentally focused message that will incite "Eco-Flow." The following analysis is organized into three subsections for creating an effective online message to promote activism – (1) textual content, (2) tone, and (3) interactive component. This is especially important when interacting with viewers in the first "eco-flow" stage of education.

Textual: Twitter

Twitter is analyzed in this study as the textual component of an environmental message because it is a purely textual message communication platform and therefore can represent the foundation of environmental textual messaging. One study analyzing NGO Twitter pages found the average advocacy organization sent 103 tweets during a four week period, with 22% of those tweets being retweets, including Hyperlinks and hash tags 73% and 60% of the time (LoveJoy et al., 2012). This study found the education stage of "Eco-Flow" most prevalent in Twitter messages (68%), which were made up of event highlights, news, facts and report. The use of Twitter found in this study further suggest widespread use in environmental advocacy organizations to educate.

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Messages aimed for the second stage of eco-flow, “Community engagement,” intended to interact with community members and create a more vibrant online community was second (19%), and “action” messages intended to prompt action was third (11%) (Guo et al., 2013). This report suggest Twitter’s primary use as an educational platform and tool for the first stage of Eco-flow.

A few techniques highlighted within the Twitter framework were the use of hash tags for public education book marks, tweeting at celebrities (known as celebrity phising) for community engagement, and using hyperlinks to coordinate events, promote grassroots lobbying, and petition signing (Gao et al., 2012). Other forms of textual messages in social media will need to be analyzed to fully understand the use of textual messages due to unique platform features within each social media platform structure.

Tone: Ending the Fear Tone

There is a delicate formula environmental advocacy organizations must follow to capture a viewer’s interest and create a lasting impression. Images associated with an organization or initiative should aim to stimulate a positive emotional sense of obtainable achievement.

The most-widespread mistake in framing environmental communication is adopting the overused, outdated, and ineffective “fear” or “doomsday” framework (Lorenzoni 2006). The underlying fear tone associated with environmental communication spawned from the discovery of climate change and the early discussions within the scientific community. Climate change pioneer Roger Revelle’s daunting quotes after his initial reports in 1957, “Thus human beings are now

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carrying out a large scale geophysical experiment of a kind that could not have happened in the past nor be reproduced in the future,” created the widespread attention needed around the issue at the time (Day, 2000). Today, However the attention of climate change is wide spread, and we have to look into other message tones that move past the first stage of eco-flow, increasing general awareness and move into the second and third stages of eco-flow, community engagement and environmental action.

Among other studies, a multi-method study focusing on visual and iconic representation of climate change in the United Kingdom found that while the most dramatic, globally-center images of climate change gained the most attention, but were the weakest in stimulating personal environmental behavioral changes (O’Neill et al, 2009). This research found the visuals depicting large complex global issues had an overwhelmingly negative impact in creating active engagement with climate change, meaning the images that hooked the attention of the viewers were not the most effective images in empowering the viewer to act. However, the images that were locally centered engaged viewers on a personal level and stimulated a heightened sense of what the individual could do personally (O’Neill et al., 2009).

When creating a visual message, it’s important to identify the purpose of the visual first, and then construct an image dramatic enough to capture the attention of a viewer but not overwhelming to the point where a viewer feels insignificant and unable to contribute (O’Neill et al., 2009). Visuals must be of local reference to engage viewers personally and influence action in their everyday lives (O’Neill et al., 2009). The evidence presented suggests focusing visual messages on specific topics

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within local communities to increase human engagement, versus complex global issues with images that don't pertain to a viewer's everyday life. For instance, if a local community's message is to reduce neighborhood carbon output, instead of using visuals of a dying polar bear in the arctic, the community should use visuals that are applicable in the community like a local mountain ski range and suggest an applicable action such as investing in a local solar energy company.

Interactivity Component

The interactive design of an advocacy message is essential in reaching the second step and third step of Eco-flow – engaging a community, and inspiring environmental action. Hot Dish was the first Facebook application designed to distribute and discuss climate change news, share stories, and engage users in eco-challenges. Two other web applications “Totem Park” and “In the Dark” utilized many similar features in effectively changing energy consumption habits among first-year college students (Senbel et al., 2014). These applications asked participants to craft a personal profile that recorded their activism and showcased their level of involvement with user statistics (Greenhow 2010). A Hot Dish study recorded over 1,500 shared stories and completed eco-challenges over an eight week period with 346 users (Robelia et al., 2011). An “In the Dark” study found video blogging and contacting politicians were the least participated challenges, while daily challenges and challenges with friends were the challenges most participants participated in (Senbel et al., 2014). A similar “daily use” trend was found with Hot Dish, as users reported forming habits of checking Hot Dish everyday when they logged onto Facebook. They enjoyed recording and sharing

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their environmental behaviors (Robelia et al., 2011). These applications can be used by an environmental communication platform to create positive environmental daily habits with its users.

These applications demonstrated both the social learning and free-choice theory by presenting various avenues of environmental information and allowing users to complete the environmental task they choose amongst their personal social networks and in their everyday lives (Greenhow 2010). The Hot Dish, Totem Park and In the Dark applications all reported increased level of eco-awareness and increase in pro-environmental behaviors in the short term and long term (Robelia et al. 2011, Senbel 2014). These application reports suggest that interactive components should incorporate daily free-choice competitions through a social networking user interface that utilizes prizes and awards as positive feedback loops.

Interactive Documentaries

The interactive components analyzed in the previous section sum up one basic principle – viewers enjoy contributing and “documenting” their pro-environmental behavioral changes on a platform. Previous research suggest looking into Interactive documentaries as an avenue of self-documentation of eco-friendly behavior because of it’s ability to freely document under the free choice learning theory, and document amongst friends.

Traditional documentary film has long been recognized for its educational purposes and ability to influence social change (Whiteman, 2013). One study focusing on an NGO’s use of documentary as an educational tool found that 75% of

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viewers were more likely to better understand the issue presented, gain more knowledge and skills around the issues that contributed to them participating with the issue presented (Beth 2012). Research comparing traditional documentaries and interactive documentaries in their effectiveness of viewer engagement does not exist. However, new technological advancements in interactive documentary open up more immersive avenues of engagement which encourage viewers to act differently offline based on their actions performed online, or possibly converging the two in a hybrid state of space (Favero , 2013).

Using many of the storytelling techniques of traditional documentaries, interactive documentaries use the modern tools of technology to expand how we produce, watch, and contribute to a documentary. Unlike traditional documentaries and web documentaries, interactive documentaries do not have to follow a linear storytelling format, or the web's golden rule to "keep it short" in duration (Almeida, 2010). In fact, interactive documentaries don't have to have a defined end at all. The accessibility of the web creates an opportunity for producers to add on and modify the documentary as time goes on. The web-based platform also presents avenue of collaboration with producers, where users can actually become apart of the production process by adding media content to the documentary. The ability for user to gathering information freely utilizes the principles within the free-choice learning theory and the ability for users to contribute with producers applies social learning principles.

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Four Modes of Interactive Documentary.

To better understand the different qualities within different interactive documentary frameworks, we can separate interactive documentaries into four modes – conversational, hypertext, participative, and experimental (Aston et al, 2012). This section defines the different modes of interactive documentary as defined by Aston, and presents interactive documentary examples within each mode.

The Conversational mode is valuable in placing a user in front of hypothetical ethical scenarios with choices to choose from created by producer's choices. Placing a user in a three dimensional environment to explore a virtual scenario is often within this mode. An example of the conversational mode is experienced in the interactive documentary "Only Fish Shall Visit." Users explore a 3d environment representing Halfeti before a flood occurs caused by the construction of a near by dam. This interaction induces a feeling of "being there" in the user, and resembles a video game structure, granting -dom to roam the environment freely, exploring the environment as they please (Almeida, 2010). This mode utilizes free choice learning principles, but offers little engagement with a user's social networks, or with the physical world.

The hypertext mode is similar to the conversational mode, except it has an array of environments, following the logic of "click here and go there." The hypertext mode provides an array of environments for the user to explore in an archive-like format prompting user's to create their own personalized and non-

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linear experience with the content created by the producers. This mode tells a story by offering many stories simultaneously for users to navigate through.

Winner of Prix SCAM 2009 digital interactive artwork award, "Journey to the end of coal," is a hypertext-mode interactive documentary designed for users to have the ability to choose "their own path" or create "their own adventure" as the world runs out of coal. The hypertext platform allows users to freely explore a scenario, or set of scenarios based on their choices (or what they click on). However, users still have little avenues of engagement with social networks and no ability to contribute media content to the interactive documentary. There is limited opportunity for contribution and social engagement in the hypertext and conversational mode in their pure forms (O'Flynn, 2012). Like conversational mode, hypertext mode is an enhanced experience that utilizes the free-choice learning theory, but lacks social interaction with a user's networks and the outside world. However, if combined with the participative and experimental mode we a hybrid mode can be created to induce social interaction through a users social media outlets or through interactions in the physical world.

The participatory mode expects users to contribute to the documentary through an "open conversation format." Unlike the hypertext and conversational mode, producers in the participatory mode only stage a conversation, subject, story, or event and then allow users to become involved in the production process. The participatory mode rely heavily on the input of its users to create media content within the documentary and sometimes to fund interactive documentaries thorough crowdfunding websites such as Kickstarter (Harvey, 2013). The participatory mode

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utilizes online virtual environments to create avenues of social and environmental participation in the physical world (Almeida, 2010).

The participatory mode is used in the interactive documentary “18 Days in Egypt” to prompt citizens of Egypt to send in their pictures and videos taken during the Egypt revolution in 2011 (Favero, 2013). This documentary platform uses a website to crowd source media from users, and crowdfunding platforms, such as Kick-starter, to gather financial support. The user participation mode in “18 days in Egypt” allows users to become more involved with, and immersed deeper into the story of the Egyptian Revolution by taking a user through all three steps of eco-flow. Giving users an outlet to add media content to an online communication platform can help creating participation in the physical world (Favero, 2013). This is a potentially powerful communication concept to consider when constructing an environmental communication platform that aims to create online and offline action from its users.

The latest documentary mode is the experimental mode, which invites users to experience a “hybrid space” as an educational and engagement tool on a geo-location basis. This mode aims to converge virtual and physical space, enabling users’ senses and challenging user perception of a physical space. While both the participation and experimental modes use the physical world, the experimental mode differs by employing alternate reality tactics and game-like feedback loops to get captivate users and influence behavioral changes.

Jane MCGonigal’s “World Without Oil” is often referred to as alternate reality game but also fits into the experimental mode of interactive documentaries. The

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“World Without Oil” platform presents a hypothetical future scenario of a world without oil to its users. However, this isn’t a game played on a computer screen; instead, this game is played in the physical world and in a user’s everyday life. Similar to the “in the dark application” this platform influences changes in environmental behaviors through daily interactions, which cause positive feedback loops. These platforms created positive feedback loops by awarding user participation in the form of unlocking new levels and gathering points to keep users interacting with the platform. Receiving praise from other users in the “World Without Oil” platform is a form of community positive feedback. The “World Without Oil” platform allows users to create their own documentary by sharing videos, status, pictures and updates of their lives “without oil.” The positive feedback loops have proven in the participatory and experimental modes of interactive documentary are not possible in linear documentaries and were not readily available to “documentary producers” until recently. Environmental communication platforms in the 21st century should consider gamification tactics, as well as the hybrid use of virtual and physical space to create environmental behavioral changes.

Participatory Video Software

Interactive video platforms such as Korsakow and Popcorn have surfaced in recent years creating new ways for non-programming creators to develop interactive documentaries. These free software are the next step in interactive nonlinear

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storytelling, and potential interactive tool for an environmental communication platform.

Korsakow is a free open source software available online to anyone created by Florian Thalhofer as a master's thesis project (Favero, 2013). Korsakow is an interface designed for non-programming creators to produce dynamic stories in combination of text, video, photos, animation and audio (O'Flynn, 2012). Korsakow is especially useful in letting users to dictate the order of sequence within a story. However, the elements within the platform are solely the input of the producers, Thus, limiting users ability to manipulating media content and weakening overall interactivity. Hypertext mode and conversational modes are present in many Korsakow pieces.

Another potential software environmental interactive documentaries could utilize to promote eco-activism is Popcorn software, an technology designed to integrate the web into video by facilitating the connections of specific pieces of information available on the net to a video clip (O'Flynn, 2012). Viewers are offered a series of parallel links of pieces presented into the video. This platform allows for user to navigate the links associated within the video while watching the video. Popcorn creates a more content dense video platform with multiple avenues of participation influencing a more activate user.

Popcorn software is used in "Popcorn Maker" a code-free, easy to use, remixing platform for users to remix videos made from other Popcorn users. "Popcorn Maker" encourages collaboration from many in producing a single video, or series of videos.

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“Butter” is another software platform created by Popcorn. This software is for JavaScript coders to create their own interactive video sharing and collaborative templates using the Popcorn software (Favero, 2013). Environmental communication platforms could develop their own templates based of these software to influence video participation.

Future Messages and Platforms

The environmental community can use the “eco-flow” structure to create strategic communication campaigns to influence environmental behavioral changes in the modern interactive modern of the 21st century. This environmental communication formula makes use of modern interactive communication technologies to enhance environmental messages and platforms to transform passive viewers into active users.

Future messages should avoid the deeply rooted and outdated fear tone or “doomsday” tone and instead use a more positive, locally based tone that creates a sense of duty and obtainability in the viewer (O’Neill et al., 2009). Social media outlets such as Twitter play a vital role in educational messages, as well as community engagement, but less of a role in facilitating action messages. (Guo et al., 2013) Constructing environmental messages use the principles of the social learning theory and free-choice learning theory to induce smooth transition from all three stages of eco-flow (education, community engagement, and action is) is essential. (LoveJoy 2012).

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Interactive web tools such as “Hot Dish” and “In the Dark” are templates for more interactive models that use competition, and daily task oriented challenges to influence environmental behavioral changes (Robelia et al.,2011; Senbel et al., 2014). “Hot Dish” and “In the Dark” platforms leverage social theory principles to influence environmental behaviors within real-life socials. The “Hot Dish,” and “In the Dark” applications all reported increased level of eco-awareness and increase in pro-environmental behaviors in the short term and long term (Robelia et al. 2011,)

Interactive documentary’s role in interactive communication should further be explored, especially the participatory and experimental modes of interactive documentaries (Aston et al., 2014). Interactive documentaries present useful tools in creative positive feedback loops that influence participation on locally centered issues. (O’Flynn, 2012). Recently created open source software templates, Korsakow and Popcorn, present new avenues for non-programing users to create more interactive video content. (Favero, 2013).

New Interactive platforms such as “18 days in Egypt” and a “World Without Oil” serve as examples of how we can leverage modern communication technologies to create social and environmental changes in the physical world. Further experimentation and research between these platforms are essential in discovering the environmental communication formula that will cultivate positive long-term environmental behavioral changes in the 21st century.

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