Supporting Creativity in Craft Brewing: A Case Study of iPhone Use in the Transition from Novice Towards Mastery

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ABSTRACT

This paper presents a case-study of an individual engaged in the practice of craft brewing and the ways in which his use of a mobile device has supported the informal learning underpinning his transition from novice towards mastery. Through participant observation, online ethnographic methods and interview data the authors present a description of how the mobile device is used. The authors argue for the importance of considering the role of constraint in the creative process, and the place of expert assessment in evaluating a product as creative. These arguments are contrasted with theorisation of assessment as absent in informal learning or inappropriate for evaluating creativity.

Keywords: Beer, Constraint, Craft Brewing, Creativity, Informal Learning, iPhone, Mobile Learning

INTRODUCTION

This paper presents a case-study of an individual engaged in the practice of craft brewing and the ways in which his use of a mobile device has supported his transition from novice towards mastery. We start by defining the context and practice of craft brewing and possibilities for creativity within the practice. We situate and seek to define formal, non-formal and informal contexts for learning with our focus upon the latter. Having introduced the context and framing of learning we explore definitional issues around the notion of creativity. Having established a working definition based on criteria of originality and appropriateness we present an extended “thick” description from participant observation of the use of a mobile device by a craft brewer. We describe and discuss practices as a novice and then explore and consider subsequent changes in practice having achieved a level of mastery. We then draw tentative implications from this for theorisation of creativity and its intersection with mobile learning.

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DEFINING THE CONTEXT OF THIS STUDY: CREATIVE PRACTICE IN CRAFT BREWING

This research was prompted by a novice brewer posting to an online forum about a mobile app when preparing for his first brew: “I just love the brew pal software … if it wasn’t for the app I would be months behind where I am now in terms of understanding the stuff that’s going on.” The clear identification and association of a mobile device with informal learning of a craft practice represented an under-researched area of mobile learning. We begin with defining the craft practice of brewing and examine opportunities for “creativity” in the practice of making or designing a beer. We explore how software has been developed to support the processes involved and the relationship of this and definitions of informal learning.

Craft brewing is defined by the Brewers’ Association (2012) as “small, independent and traditional,” making beer using the raw ingredients of grains, hops, water and yeast. A brief overview of the process is as follows. First, water is heated, then malted grains are added and steeped within a narrow temperature range which enables enzymes in the malt to break down complex sugars into simpler fermentable sugars, a process called mashing. The extracted sugars are rinsed from the grain and the malt sugar solution, called ‘wort’, is then boiled with hops which add characteristic bitterness, flavour and aroma. This mixture is then rapidly cooled, aerated and yeast is added. Over a period of one to two weeks the yeast actively ferments the sugars, transforming the sweet wort into the carbonated alcoholic liquid we know as beer. Choosing which ingredients are used and how they are combined has the most significant effect on the resulting appearance, aroma, strength and taste of a beer. The ratios of ingredients, details of processes, target statistics for gravity, alcoholic strength, bitterness and colour are collected together as a recipe.

Recipes are collected and published in books, magazines or online in forums and blogs. Many of these recipes are attempts to replicate or ‘clone’ a commercial beer. Variations then occur through accident or design by substituting ingredients due to availability, or through the deliberate intention to create a different interpretation. Recipes together with exemplar commercial examples are frequently organised with reference to a beer being an example of a style, for example Guinness as a “Dry Stout” or “Fullers London Pride” as a “Best Bitter”. These styles are collected and organised by different organisations such as the UK Society of Independent Brewers (SIBA), the American Homebrewer’s Association (AHA) and the American Brewers Association (BA) and are used to judge beers in competitions. The style guides include sensory descriptions along with indicative ranges of colour, alcoholic strength and bitterness. Such guides frame publications on brewing certain styles or suggestions for explicitly breaking a style and combining or juxtaposing different signature aspects of flavour into a new product. Regardless of approach, drinkability is an over-riding concern.

In order to predict the effects of different combinations of ingredients, a lot of relatively complex and highly interdependent calculations of temperature, time, volume, and specific gravity (the density of dissolved sugars in a liquid) are required. The example below is a formula (Tinseth, 1995) for calculating bitterness from a hop addition:

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\text{Utilization} = (1.65 \times 0.000125^{(\text{OG}-1)}) \times (1-2.72^{(-0.04 \times \text{Hop Boil Time})}/4.14)
\]

\[
\text{IBU} = \text{Utilization} \times (\text{oz} \times (\text{AA}\% / 100) \times 7490) / \text{Volume of Batch in Gallons}
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Definitions:

oz = weight in ounces
OG = ‘original gravity’ a measure of sugars dissolved in a liquid as a measure of specific gravity.
IBU= International Bittering Units, one of the standard measures of bitterness.
AA = Alpha Acids a measure of bittering potential of a hop based on α acids as percentage of total hop weight.
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