Hospitality learning, teaching and research. From teaching restaurant to research lab.

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Abstract
Academics in higher education are facing increasing teaching funding constraints. For teaching restaurants, that are resource intensive facilities, with limited perceived value to University management, this could mean facing another wave of elimination similar to the one in the beginning of the new millennium. The need to better enable research activity in such establishments is of paramount importance. Research activity has the potential to increase perceived value of training restaurants. This paper presents the case study of an alternative approach that departs from the traditional teaching restaurant model design, and embraces research activity. Rather than focus on a teaching restaurant that enables research, the authors suggest the creation of research labs that may also accommodate food and beverage management teaching and learning. By placing research at the forefront of the agenda, hospitality management academic teams can better secure food and beverage teaching facilities whilst at the same time minimizing costs and maximizing research potential.

Keywords: hospitality research, teaching restaurant, learning

Introduction
Teaching restaurants have been synonymous with hospitality management learning in higher education institutions in the UK from as far back as the early 1980s (see Morrisson and Laffin 1995). The experiential learning potential made such restaurants a most useful teaching facility that contributed significantly to the learning and development of future hospitality managers. However, such facilities are often so resource intensive (Alexander et al 2009) that by the beginning of the new millennium a number of Universities in the UK made the decision to close down their teaching restaurants. Dutton and Farbrother (2005) hinted at such closures but the examples of the teaching restaurant closures at Strathclyde University and London Metropolitan University served as very real examples of a possibly stark future for training restaurants across the country.

Some of the problematic issues with teaching restaurants have been identified by some hospitality management authors. These include, high costs, unwillingness to
change, traditional approach to teaching food and beverage management, absence of revenue streams that balance the costs and under-utilization of the research potential of such facilities (Alexander et al., 2009; Jones, 2004; Coleman et al., 2002; Baker, Rimmington, 1999; Cattet & Riley, 1995; Morrison & Laffin, 1995).

Morrison (2002 p 161) points to the need for, “increased introspection and critical analysis regarding the fundamentals of hospitality research”. She argues for greater reflection over the essential nature of research in the area, that such research may benefit from introspection “in the sense that its very epistemological basis and the conceptualization of its nature, incidence and forms require much deeper theorizing to liberate it from current functionalism.” She points to the focus of social interaction, that hospitality overflows “with social interaction, offering rich laboratories within which to investigate the multifaceted phenomena and social encounters and human exchange, which is validated by the extent of incursion into the field by social scientists.” Training restaurants appear to offer the perfect setting to measure the effects of such social interactions both from a social scientific approach and a management approach.

The authors explore further the case initially reported by Dutton and Farbrother, (2005) who revealed the early developments of an alternative model for a teaching restaurant at the University of Brighton. The case attempts an approach that may respond to Alexander et al (2009) suggestion of two missed opportunities one in the area of revenue generation and another in the area of research activity.

The paper investigates the case of the Culinary Arts Studio (CAS) at the University of Brighton. The paper explores the results of this redesign exercise and presents the case of a teaching restaurant that embraced the change from a traditional teaching restaurant model to a multi-pupose research and learning facility.

**Methodology**

The methodology employed in this paper involves a combination of participant observation and consumer storytelling as described by Woodside (2010). The authors of this paper engaged in participant observation with the research and teaching activities of CAS for approximately eleven months. Three stakeholders (a teaching staff and two students) where interviewed. Utilizing unstructured interviewing participants entered in storytelling mode that allowed the interviewer to capture his experiences and perceptions of success and failures. Each interview lasted from ten minutes to fifty-five minutes depending on how much of the story the interviewee wished to elaborate. In all three cases the participants recalled incidents at CAS placing themselves as the protagonist, their narrative storytelling (McKee, 2003) provides a platform that enables the researcher to be informed about the students conscious thoughts in regards to the effectiveness of CAS as a learning environment. Through those interviews a clear chronology and three distinct areas are emerging: a) research activity at CAS prior to the changes, b) attempted commercial activity and c) teaching and learning.

The authors recognise their inherent bias due to their involvement with CAS. However this paper does not aim to establish if the CAS approach is better than other teaching restaurant approaches, simply to investigate if opportunities missed in other teaching restaurants as reported by Alexander et al (2009) had been leveraged at all. The paper thus aims to report on the successes and failures of this particular model of research and learning engagement that was adopted by the CAS team. The authors recognise that although the design and technology examined in this case facilitates a positive change, real success only becomes possible if academics fully embrace and utilize such a changed space.
The case of the Culinary Arts Studio
The following sections summarize the case study findings both from the interview with the key academic that designed the facility and the authors’ participant observation notes.

CAS before and after (Participant observations and interview)
The key differences between the old training restaurant and the new research lab and teaching restaurant manifest as a departure from the traditional design of teaching restaurants as well as the utilization of technology that enables both students and researchers to simulate conditions that allow the manipulation of consumer perceptions.

The old training restaurant was resource intensive, requiring four times more teaching and storage space than the current design. This made the modules that was taught in the teaching restaurant extremely expensive when calculating investment cost to student ratio and comparing it to the average student costs. Coupled by the fact that the revenue generated by the restaurant did not meet the costs one can see how the decision to either redesign or remove the restaurant all together had to be considered by the team. As the interviewee puts it “ …at that time on top of the restaurant we had a furniture store, a wine cellar a paper store a gas cupboard … in fact the majority of the building was utilized for hospitality purposes…”

Figure 1. The original restaurant Kitchens and example of service layout

The new restaurant design incorporates a post modern feel and less formal dining environment than its predecessor.

CAS utilizes only 25% of the space previously allocated in the form of serving, preparation and storage areas of its predecessor. Advanced production and information technology enables the capture of data that can be utilized both in research and teaching and learning. On one side the studio features six Mac computers that can be utilized for research or as part of the learning experience or as part of manipulating the restaurant ambience (see figure 2).

Figure 2. The CAS Mac computers.
The original restaurant had a kitchen that was far larger than the existing CAS but was under utilized as the restaurant did not attract sufficient number of customers. The new design allowed for a better learning experience of both the students that engaged in the production as the open plan space ensures they remain focused as they are constantly observed by guests and the students engaged in the service of the food and beverages (figure 3).

Visitors get an enhanced understanding of the process of learning in a teaching restaurant. Researchers of food and drink can reconfigure the seating area and utilise the production area to a fully functional demonstration kitchen.

Figure 3. The CAS open plan Kitchen.

The demonstration kitchen has the potential to be utilized for team building exercises, recipe demonstration and product and recipe development.

Advanced technology can enable research that measures consumer perceptions of food under different lighting, colour treatments (see example figure 4). Other examples of such technology in CAS include a combination oven that incorporates microprocessors which enable various functions from the programming of recipes to the production of detailed reports about the cooking process and temperature fluctuations of dishes during the cooking process.

Figure 4. Example of light, colour, taste manipulation.

In terms of staffing, the old restaurant model had three members of staff at the technician level and one academic supporting the teaching compared to the new model which required only one academic with one part time technician.

The current CAS research agenda (Interview findings A)

When prompted to describe the key differences between this teaching restaurant and others the interviewee clearly makes a distinction by suggesting that the CAS is not a teaching restaurant that is utilized for research but the other way around “… well its not a teaching restaurant, it is a research facility that has data collection points, it has computers that can be utilized for product development…”

The following paragraphs provide an insight into the key research themes that were extracted from the interview and the key incidents that the interviewee shared through his stories.

A number of empirical research projects have been initiated and completed by colleagues and research groups choosing to utilize CAS as a research lab, most notably the Brighton Hospitality Research Group (BHRG). Prior to and during the initial phases of the Culinary Arts Studio (CAS) development a group of academics
established a research group that researched social interactions and culinary arts. This research looked at social behaviour, sensory perceptions and culinary arts with particular reference to developing level 7 awards in Arts or Science.

The objectives of this research were to lay down fundamental foundations that would: stimulate research into various aspects of how hospitality and culinary arts students learn within the context of a less structured, studio-style learning environment, specifically the social interactions and customer acceptance issues created during the preparation and/or service of food.

The intention has been to attract commercial and academic research funding to research the meaning of the meal and identification of the transference of skills from hospitality management or culinary arts professionals to learners and customers or test subjects.

An overarching desire is to disseminate research findings within the Hospitality, Management and Culinary Arts fields to aid future teaching and learning, inform novel learning strategies and advance knowledge. Developing an interdisciplinary approach to food through empirically based research that supports healthy eating and responding to governmental nutritional educational programmes, and devise ways to disseminate this to a wider community. The notion of raising public understanding of food cultures and influence policy decisions regarding food and eating within the UK and abroad is a long term goal.

The intention was to create a research and learning environment by reconfiguring existing facilities known as Greynore 2 on the Darley Road Campus of the University of Brighton. The realization of this CAS facility and laboratory has been achieved by incorporating elements of a professional cooking suite with multiple stations with wheelchair access. Hard-wired closed circuit television links between preparation areas, tasting area and observation areas have been incorporated into the design for covert observations to be undertaken. Databases have been established within the CAS to hold detailed evidence of research activities within the facility. These range from simple collections of photographs of tabletop architecture to complex Codes of Best Practice to be used when operating a Small to Medium sized Enterprise (SME). Several password protected data files containing research material are available upon request for the academic or support staff. Semiotic material regarding Culinary Arts are stored in the CAS and are available to any student from any route way within the School of Service Management, as is a menu archive dating back to the 19th Century.

The CAS has enabled researchers and students (academic and commercial) to systematically observe, inter alia, consumer food behaviour in a live environment. Consumer perceptions were measured after a meal by testing mood ratings and analyzing outcomes of the physiological processes, where ingested food triggers signals which lead to feelings of fullness. Researchers have explored the theory that individual expectations about a food or drink modify the way physiological cues are interpreted and so alter how full we feel after eating or drinking. This evidence based empirical research not carried out to any great extent outside of a laboratory environment, therefore more naturalistic studies can be carried out in the CAS using a quasi-restaurant setting and have been used to great affect.

The academic strands arising from such activities, observations and focused research have covered a number of areas such as social anthropology and the construction of taste combined with a sociological and the marketing perspective
about the consumption of food. Psychology the transference of skills and learning, service experience acceptability and the meal experience, but moreover understanding the processes which promote eating and the risk of overeating and a consequently a positive balance. Taking a more cognitive view our research considers the extent to which our relationship with a consumer may be modified. Thus a beverage may be consumed on the expectation of reduced thirst, but not to attribute physiological cues generated by the drinks nutrient values misses an opportunity to collect data for future evaluation. To ensure the outcome is both consistent and relevant to real-life behaviour the activities in the CAS are constantly evaluated, updated to ensure it remains the ideal environment for naturalistic studies as a quasi-restaurant.

The overall outcome of a number of research projects have given both a detailed evaluation of the interaction between consumer expectations and physiological controls and have helped establish interactions to formulate new design rules for the development of future food products that generate customer-perceivable benefits and acceptability of food which will inform our knowledge of service deliver and supply chain management. Critical evaluations of the CAS over the last five years have taken place, and the undergraduate programme is being reviewed in line with normal Higher Education protocols; therefore it is appropriate to make a mark in time. Strange as it may seem, the most difficult problem, which has arisen with the CAS is access. The number of module leaders who would prefer to use the CAS far out weight its capacity. Predicting the acceptance of food and beverages, the impact of controlled changes within the studio / laboratory upon the meal experience of consumers and clients relating acceptance and characteristics to acceptance of certain food groups.

The evaluation of demographic parameters and overall acceptability of foods for a variety of cultures and religious groups has been of particular importance to the postgraduate students for a number of route-ways.

A current research project based in the CAS has helped inform teaching and facilitate engagement with non-traditional groups, which are not normally targeted by hospitality management or culinary arts educators. HOTPOT is a joint project between the Institut Polytechnique La Salle Beauvais (LSB), France and The University of Brighton, School of Service Management (SSM).

HOTPOT is financed by the European Regional Development Fund Interreg 4 programme over a three year period to the sum of 2.8million Euros. The aim of the programme of research is to examine Novel Food Service Technologies for disadvantaged populations in the cross channel region. This significant Euro project uses both mid-morning time-scales and lunchtime events in a naturalistic environment, to determine the extent to which sensory expectations modify. Outcomes, which are being measured, include wellbeing, state of mind, anxiety levels and hunger prior to commencement of the product testing. Energy intake and appetite post-consumption were not tested during these trials, but will be considered for any future project. Overall, the interim project outcomes could explain discrepancies in the literature on the nature of microwave products and may offer the food industry new design rules for the development of food products with consumer perceivable benefits.

The sense of taste, visual senses, tactile and odour evaluation are tested as are sensory evaluation in product development and error identification during the pilot phases.
Undesirable flavours, olfactory threshold levels and texture profiles are measured during the laboratory trials prior to application in the CAS. All verbal anchors in the evaluation of the food are recorded for future publication. Several limitations of sensory evaluation have been identified, particularly with the gap between laboratory based studies and culinary practices.

The research element of the project aims to provide innovative technical procedures to produce affordable meals with an enhanced nutritional value, whilst being microbiologically safe. A selection of novel meals are being developed using microwave technology and tested to determine the effects of this heating methodology on nutrient availability, undesirable by-products and microorganism and spoilage organism numbers. The data being produced used has helped to develop a predictive model of inactivation of food-borne pathogens and spoilage organisms using microwave technology. The joint activity between LSB and SSM has informed learning and allowed for the development and delivery of a joint curriculum between SSM and LSB for a MSc Food Service & Wellbeing Management and Mastère Spécialisé CGE Health and Food Service Management. These awards are offered by both institutions on a blended learning basis, which enables students and academics to switch between the 2 institutions to study for and deliver modules respectively. The first cohort commenced their studies in SSM in September 2011. A number of joint activities between the two partners in the project have been devised to research and develop a business and scientific support programme for small and medium sized enterprises (SME) in the wellbeing and food service sectors in South East England and the Picardie region of France. This has been achieved by developing a series of seminars for SME owners or designated persons. A free follow-up consultancy service is available to participants, where academics can visit the SME’s premises to see how they have improved their offering and to give advice on how to implement new ideas and innovative techniques into their business. Public and social engagement strategy has been the focus of a ‘HOTPOT’ research theme and involve a range of media materials being produced to inform and motivate specific target groups and end users. These materials have been developed in cooperation with local school children and have been distributed through a number of open access events, a travelling road show and the project website. Target groups have included school children, students in secondary education, adult social care groups, and neighborhood food interest groups and with links being established with local institutional food providers, restaurants and other groups. The palatability and memory of flavours and experiences, negative or positive have been achieved through the HOTPOT project, which involves consumer behavioural testing and integration of cognitive and written post-injective/consumption signals. This project uses optimal manipulations of microwave treatments and customer expectations, sensory quality & levels of acceptability to two main test groups 18-25 and over 60 years of age. Combinations of expectations through product tastings and sensory quality were the first two studies concentrate on mixed vegetable treatments and hotpot recipe treatments. Communication and dissemination has achieved by building and maintaining project website in English & French, complimented with a quarterly project newsletter in English & French. The project was launched with 2 events one in England and one in France in April 2010. The mid-project symposium was held simultaneously in England and France at the beginning of September 2011. An end-of-project conference and publication of conference proceedings will be organised for the end of the project at the beginning of 2013.

Running as a connective thread through the first five years of the CAS is the idea of green work production environments and ethical food preparation values. Moreover, there has always been significant goodwill and technical readiness of staff and
students to deliver a significant shift in the application of sustainable and green issues to the area of food, cooking and culture. The resulting research culture has added value to professional food production and service that reflects growing consumer concern about what we eat.

(SSM) has identified a niche within the food service sector to create a centre of excellence that will enable knowledge growth and transfer in the fields of Hospitality Management and Culinary Arts.

**Commercial activity and revenue generation (interview findings B)**

Commercial activities were organised to raise awareness of the CAS to local people within Eastbourne and the surrounding area, which have been kindly sponsored by Waitrose and have attracted a number of clients to a variety of cookery demonstrations and special culinary events. A local wine merchant and wine retailer of the year for the South of England used the CAS as a wine school whilst they established their business. This successful symbiotic relationship is on going and proved very successful. The owners regularly help students with a number of academic projects and charitable functions. The most successful non-academic or commercial activity has been the team building exercises carried out in the CAS. They are simple to organise, straightforward to manage and extremely rewarding for the participants. The friendly though competitive environment has proved very successful and has solicited a great number of positive comments. The interviewee feels that such activity needs to be more actively pursued as it can add to the perceived value of CAS by management “…bespoke individual events such as team building exercises…are great source of revenue…but we need to pursue more of that…”.

The interviewee suggests that in the earlier design of CAS, a small function room was incorporated into the design of the facility and the team designated the Claret room for use as a private dining space and bookable at a premium rate. This room was set aside as a homage to the training restaurant as some members of staff believed that there would be a strong and forceful reaction to the open kitchen concept of the CAS. The interviewee suggests that this proved to be far removed from the reality which was that the room was only booked on one occasion and the customer feedback was that they felt detached from the action and would certainly be dining in the CAS proper next time, ‘its much more fun, we felt we missed out.

The guest comments in the comment book of the CAS are full of positive feelings on both the design of the facility, the student service and the recipes produced.

**Pedagogy (interview findings C)**

Student behaviour as they learn about the social significance of food and eating in the CAS has been difficult to judge particularly as a full undergraduate programme review was undertaken and new programme rolled out at the same time as the CAS opened its doors. However gauging the reactions of guests, served by students studying International Hospitality Management of Culinary Arts there is evidence to support the perception of added enthusiasm by the students. This enthusiasm could be attributed to the design of the open plan kitchen that allows a direct involvement with the guests enabling an almost “theatrical performance” to take place.

The core customers of the CAS when in restaurant mode have experienced service delivery variations, many of which they were unaccustomed to. These ranged from the discarding the banded and branded crockery, which was hand made by Wedgewood pottery to a 25 year old design and a change of student uniform from
bow tie to silver tie or even ‘no tie’. A number of customers have not continued to support the transition, however the reality is that to engage the groups who operate the CAS there is a requirement to have no fewer than fifteen customers and no more than twenty-five. These numbers have been collected and collated over the first-five year period of operating the CAS. The mantra of the CAS is ‘we are not here to train chefs and waiters’, but to operate an SME for the students to observe customer interactions, test management theories such as group dynamics and the development and application of management strategies. Other observers such as level 6 final projects can be run alongside the CAS whilst operating in a restaurant configuration.

In one case the academic interviewed shares a story of an elderly customer who cannot appreciate why her risotto takes that long and when she was explained that the risotto is cooked from scratch and she was able to witness the production in the open kitchen she was amazed as she always bought risotto as a packaged product from the supermarket and had assumed it always takes 4 minutes to cook “...it then became clear that she was of a generation that had no understanding or training as to how to make risotto...” Such moments of epiphany for the lecturers involved allowed an understanding into the mind and experiences of the consumer and how they interpreted occurrences within their perceived meal experience.

**Interviews with the students (Interview findings D & E)**

Two students were interviewed for the purposes of this paper. Both students were female students that studied as undergraduate students and had experience of learning facilitated by CAS for three years. Their interaction with CAS was in the first and second years of study. In the first studying a module that engaged them in the production and service and in the second year a module that engaged students in managing an event at CAS. Upon the completion of their undergraduate degree, both students continued to pursue further study within the University of Brighton and engaged in postgraduate studies that saw them use the CAS facility both as a classroom for small postgraduate modules as well as a research and product development facility.

Students were asked to explain how realistic they felt the restaurant environment was in their first year and both agreed that they felt it was very realistic.

“...in the first year we had to treat it as a normal restaurant serving both customers from the surrounding area as well as members of staff...”

The first student stressed that she had extensive restaurant experience and although at first the CAS set up seemed a little peculiar she enjoyed the informal nature of the environment enabling her to better engage in the learning. The second student admitted her surprise when she first faced CAS as an undergraduate student.

“...I was quite surprised by the design ...with the computers and the open kitchen...it was a very positive surprise, I didn’t expect anything like that...”

During the second year module students get the opportunity to utilize a number of managerial principles including finance and budgeting, marketing and communications, organizational skills and event management skills.

“...in the second year we had to come up with a fast food concept but not the unhealthy kind of staff...and CAS was a space that we could use in whatever way we needed to run the fast food operation...”
At postgraduate level the students seem to understand the research potential of CAS and actively engage in hospitality management research projects within the facility.

“...this year I have participated in a research project that looked at perceptions of colour... it has various technology that enables research...I think it is a unique environment in terms of that...”

Both students were very positive when describing their experiences within CAS both as undergraduates and as postgraduates. All of the critical incidents shared in their interview were of a positive nature. “...I think in general is a very nice facility...I enjoyed both the teaching and the research activities in CAS…”

The students seem to appreciate the facility and its contribution to their learning experience. The second student also suggested that she had been a customer at CAS for more than one occasion and has always enjoyed the experience.

Conclusions
CAS is the result of a new model of a hospitality research lab. Unlike the teaching restaurants that may serve as a research facility, the CAS design enables the facility to be considered a research lab first and a teaching facility second.

With its flexible space and adaptable technology CAS is a facility that can be utilized as a product and equipment test bed, a sensory evaluation studio and product development laboratory suitable for use by undergraduate university students, postgraduate researchers, PhD and postdoctoral students. CAS has been used as an environment for product trials and equipment research and evaluation. With the research projects such as the HOTPOT, and product development with Knowledge Transfer Partnerships CAS has proved that it can be an effective research facility capable of producing high quality research results. In the research agenda this teaching restaurant meets the aspirations of both Morrisson (2002) and Alexander et al (2009). One may argue that the old design served pedagogy a little better as that was the sole focus of the restaurant although a counter argument may be that the new design allows for research to be better embedded in the teaching. Table 1 captures a visual representation of the key differences between the two designs on issues discussed in the literature.

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<tr>
<th>Issues in literature</th>
<th>Original Restaurant</th>
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<td>Research activity</td>
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Table 1. Differences between the old restaurant design and CAS.

In terms of learning and teaching the new design (CAS) can also effectively compete with other teaching restaurants. The facility already informs teaching practice within the School of Service Management at both the undergraduate and postgraduate
levels. Both students and consumers are positive about the design and aspirations of the facility.

In terms of its commercial activity the facility has not achieved its full potential and although there is room for improvement the space is so flexible that if it is not utilized for teaching or research it is utilized either as a classic class room or as a meeting room, further reducing the perceived cost of the space to management.

Overall the CAS model has been a great success but it has become so not only because of the facility design or its technology but also by the team that supports its activities and embraced the change towards a hospitality research environment.

References: