Peer Reviewed Article

A Facet Theory Model for Integrating Contextual and Personal Experiences of International Students

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Abstract

The purpose of this article is to use a facet theory research approach to provide a clear, coherent, and integrated model of international students' experiences based upon the findings of psychological research into students when studying abroad. In research that employs a facet theory approach events are classified in terms of their constituent parts or facets and the sub-elements of facets. The specification of facets serves to allow accumulative knowledge and theory construction. A model is proposed in the form of a mapping sentence with three background facets and four content facets. How the mapping sentence forms a flexible template for designing, conducting and analyzing research into international students' experiences is discussed, as is the potential in using facet theory to develop a cumulative body of knowledge about this student group.

Keywords: International students, student experience, facet theory approach, study abroad.

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Over recent decades the international student has become an increasingly frequent sight on campuses across the world. Indeed, it has been claimed that international students, and the proclamation of the positive times these students have experienced whilst while studying within the shores of their host country, are the best form of advertising and recruitment strategy that a country's education system can employ (Karuppan & Barari, 2011). Over the last two decades, there has been an ever increasing number of international students in US higher education. In 1999 Asian students were thought to represent more than 10% of American Students (Heggins & Jackson, 2003) and greater resources have been allocated for international students as their increased numbers have made them important sources of income for Western universities (Huang, 2008). This growth has continued apace and by 2008/09 numbers had hit an all time high of 671,616, an 8% growth on the previous year and with students from China rising 60% over this period (Fischer, 2009). By 2010/2011, the number of international students studying in the US had risen to 723,277 (McMurtrie, 2011) and to 764,495 by 2011/2012 (Institute of Education, 2012). Academic interest in this group of students has also grown as evidenced by the increasing number of books and academic articles published about the experiences of these students (for example: Huang, 2008; Montgomery, 2010) and the appearance of a journal dedicated to research about these students (Journal for International Students). In addition, researchers are interested in not only non-native students but also the analogous study abroad student (e.g., Sandell, 2007; Smith & Curry, 2011).

There is no doubt that students who study in their non-native lands have distinctive types of educational and social experiences when undertaking higher education. These experiences, and how they may differ from those of native students, have been subjected to many research inquiries. For example, these varied experiences are shown in the work of Tran (2011) in which the author demonstrates how Chinese and Vietnamese international students "make meaning" of their experiences in order to enable them to adapt to their new environments. Smith and Curry (2011) analyzed data from a student survey of 36 international nursing students attending a community college in Florida and found that the experience of studying abroad did influence students' future professional and personal development. Montgomery (2010) considered the experience of the international student in terms of social, cultural and academic differences and has looked at the effects of social factors and learning environments both within and beyond the college. She believes that being an international student may be a positive experience as international students are able to imbue their learning with their own valid meanings and both faculty and students are able to develop experiences with cross-cultural value. Negative events in students' lives are of greater concern to faculty, college administrators and students than positive experiences. Therefore, within this paper I will exclusively consider the possible negative effects associated in international students' experiences of attending college abroad. The aim of this paper is to reflect upon selected research and from this to develop a structure of students' negative experiences. The long-term aim of this writing is to offer a structural model as a template for future research. In the following section I will commence consideration of international student reactions to studying abroad.

Issues Associated with Being an International Student

Perhaps it is not surprising that research and writing about the experiences of international students has tended to concentrate upon the difficulties and the problems international students experience rather than more positive experiential aspects. Many different variables have been chosen to evidence these negative experiences. For instance, Heggins (2003) found seven significant features effect the development of Asian international students: choice, adjustment, communication, learning, participation, external pressures of family, and traditional values. In the paragraphs that follow, I will consider some of these features.

Culture

The less than positive aspects of being an international student have been found to include acculturative stress (or culture shock). For example, Gonzales (2003) noted these reactions in the experiences of Chinese and Indonesian international students. Cultural factors, and more specifically culture shock reactions, have often been thought to evolve through stages in which students first go through periods of excitement followed by crisis and readjustment (e.g., Junious, Malecha, Tart, & Young, 2010). However, other researchers (e.g., Ward, Okura, Kennedy, & Kojima, 1998) have claimed that cultural adjustment stress is greatest when international students first arrive in a new host country and that after the third or fourth month this culture based stress is replaced by stress related to academic studies. Other research has concentrated upon aspects of, or barriers to, cultural adjustment such as academic, health insurance, residential location, social interactions, transportation and discrimination issues (Grahame & Poyrazli, 2007).

When considering the experiences of students studying and living in a non-native country, several factors keep emerging in the literature as being influential. Among these elements are the problems that arise due to having to communicate across cultures (Frey & Roysircar, 2006). International students often face conflicts between their home and their adopted cultures in terms of different social/cultural norms and regulations in the context of food, lifestyle, education, climate and language / communication. Russell, Rosenthal and Thomson (2010) in their study of 979

international students' patterns of wellbeing performed cluster analysis of responses gathered across 21 measures. They found three patterns of experience to exist in their sample. The majority of respondents (59%) felt positive and connected, whilst while 34% felt unconnected and stressed and 7% were distressed and risk taking. Based upon Berry's (1997) theoretical framework of factors associated with acculturation, Liao, Liao, Heppner, Chao, and Ku (2012) examined cultural coping strategies among Chinese international students. Using a hierarchical regression analysis, they found the use of coping strategies rooted in self-control and tolerance were not associated with psychological distress if students were experiencing lower levels of stress associated with adapting to their new cultural surroundings. If international students strongly identified with their own cultural heritage, using forbearance coping was not associated with their psychological distress whether or not they were experiencing acculturation difficulties.

Aggression

In addition to cultural conflicts and the difficulties associated with adapting to these cultural conflicts, international students may be subject to a range of abusive behaviors that are due to their international status (some of which are part of cultural difficulties noted above). Aggressive abuse stretches from the subtle, almost sub-conscious behaviors committed in the course of everyday life, to overt racist attacks. The less overt, and more commonplace of these attacks have been termed micro aggressions (Sue, Capodilupo, Torino, Bucceri, Holder, Nadal, & Esquilin, 2007). Sueet al.define these acts as having demeaning implications for social minorities, characterized by being both intentional and unintentional, by their brevity, their commonplace nature, as being both verbal and behavioral and as being derogatory slights that are often color or race based. It is beyond the scope of this paper to consider in detail the component parts or subtleties of micro aggressions (see, Solozano and Yossa (2002).

Language

Many authors have provided examples that international students have difficulties with the language of their host-country and have viewed the consequences of such difficulties (e.g., Halic, Greenberg, & Paulus 2008). For example, House (2006) notes how Germans communicate differently to Americans in terms of directness of speech, self or other orientation, focus of communication and use of verbal routines. Huang (2008) discovered that even amongst international students who were satisfied with their educational experiences there were still language concerns. Language skills were also discovered to be important by Walsh (2010), who found within a European context, that language difficulties (along with cultural issues) exacerbated the difficulties that international PhD students experienced. On a positive note, whilst examining the importance of linguistic competency for international students, Karuppan and Barari (2011) discovered that when an international student is perceived to have good English language skills, discrimination toward that student group was dampened.

Discrimination

Discrimination against the international student has been found to be an important component in international students' experiences (e.g., Lee, 2007). In a qualitative study of four Japanese international female college students from a mainly white host institution, Bonazzo and Wong (2007) discovered that the students reported experiencing discrimination, prejudice, and stereotyping. These authors found a reported diversity of experiences ranging from overt discrimination to more subtle transgressions. There were four emergent themes in transcript

analysis: overt forms of prejudice and discrimination, Asian stereotypes, uniquely Japanese stereotypes, and avoidance as a coping technique. Karuppana and Bararib (2011) stressed the need for international students to experience a non-discriminatory environment in order for them to achieve successful academic performance and perceived quality of educational experience. Karuppan and Barari (2011) emphasized the important influence of students' perceptions of being discriminated against when they note how this produces a strong, negative impact upon educational experience, whilst while Wadsworth, Hecht, and Jung (2008) found that international students successful adaptation to their host cultures and their perceptions of discrimination were significantly related to their satisfaction with their education. Grahame and Poyrazli (2007) found that discrimination was an important barrier during the initial experiences of cultural adjustment.

As well as factors associated solely with the experiences of being an international student, other features that may have a significant effect upon student experiences are shared with their non-international counterparts. For example: age, (young and more vulnerable), academic levels (undergraduate and graduate), gender (female more vulnerable, Jessup-Anger, 2008), color of skin, race, ethnicity, language proficiency, accent, names, etc. (e.g., Reyes, 2010; Solórzano, 1998; Solórzano, Ceja, & Yosso, 2000; Yosso, Ceja, Smith, & Solórzano, 2009). However, in their research into international students in Australia, Russell et al. (2010) found when attempting to differentiate alternate patterns of well-being of international students demographic features were of little use.

In this brief and selective review of literature, it can be seen that several forms of negative experience have been associated with how international students react to what happens to them during their studies abroad: difficulties arising from social and/or cultural norms and regulations; discrimination; aggression; language usage; and-individual-physical and/or personal characteristics. In the literature cited, non-native students have reported that the above factors have resulted in their being treated differently to native students and this has been evidenced in reports of physical, sexual, racial, language-related, and gender related actions or mixtures of these factors.

The experiences that international students have when studying away from home may vary depending on where the students come from, and where the students study and live. Furthermore, simple divisions of experiences into discrete, homogeneous and exclusive groups may not reflect the experienced reality of students as these groups are often intertwined with each other and factors such as social, historical, political and economic contexts must also be taken into account. Notwithstanding these caveats, a substantial literature exists that has viewed psychological reactions of international students within the categories I have noted in this introduction and to form a research design template capable of yielding results that may be generalized across administrations. As yet in the literature, no consistent experiential picture has emerged of the student studying abroad. Each study has tended to concentrate upon specific aspects of the international student as this chosen aspect relates to the specific research situation or the features of student life with which the researcher is primarily concerned. Consequently, existing research has failed to provide a clear definition of international students' experiences in a manner that would result in a coherent or standardized framework within which the nomothetic experience of studying abroad can be understood. This paper is an attempt to draw this disparate body of research together.

In the present paper endeavors will be undertaken to develop such an understanding using the social science research approach of facet theory, which is a methodology employed to formulate respondent meaningful templates for research design and result interpretation. To this end, a series of categories based upon the literature are proposed which constitute international students' experiences. The aim of developing this framework and the benefit of so doing, is to provide a structure that may be used by researchers to achieve four goals to: (1) clearly differentiate

respondent meaningful aspects of experience; (2) provide a framework for integrating experiential elements; (3) allow the production of comparable findings across different studies that employ the framework in their research design and analysis; and (4) leading on from the third point, allow the development of a cumulative understanding of student experience that is bound neither by time nor location but that is flexible and sensitive to the above goals.In order to achieve these aims the theoretical framework that is offered by facet theory will be utilized to produce a definition of the international students' experience and this approach will now be reviewed.

Facet Theory Definitions and Mapping Sentence Approaches

Facet theory incorporates the notion that research, which proceeds without clearly defined content, will by necessity, produce results that are at best unlikely to contribute to a cumulative and comparable knowledge base in regard to the research content. At worst, research that is undertaken without a clearly defined content may actually commit errors of validity and reliability, regardless of whether the research is qualitative, quantitative or mixed method. Over several decades the facet theory approach to social research has clearly addressed the above concerns, which has led to a wide range of definitions and understandings clearly related to specific research content areas or domains and have allowed the accumulation of knowledge in these domains.

Before attempting to apply the facet theory approach to outline existing research into international students' experiences, it is useful to consider some of the characteristics of social sciences definitions. Suzanne Dancer (1990) claimed that whilst many components of scientific research require proof, definitions do not. Definitions are not statements that must be verified in order to be legitimate or to be useful. Consequently, definitions are, in a sense, arbitrary" (Dancer, 1990). Guttman (1950) developed the approach to social science research known as facet theory. This approach specifies a research domain for a concept being investigated in terms of the domain's pertinent sub-components, or facets, with the definition being broad enough to adequately and comprehensively cover the entirety of the research domain. Facets are useful and empirically valid components of the content area, which are united, in a mapping sentence.

A mapping sentence states a research domain's contents in terms of its important facets, elements of these facets and connects these facets using everyday language in order to suggest how facets are related to the research domain. Guttman (1950) is not alone in defining behavioral constructs through reference to observations as much psychometric practice defines the construct being measured in terms of the content of the measurement items employed (e.g. Raykov & Marcoulides, 2010). In tying to achieve a sufficient breadth to a conceptual definition, Guttman also made efforts to develop facet theory so that the procedure would be able to establish reliable definitional frameworks of research domains that may be used to investigate a given domain in a variety of real-world contexts.

Facet theory is an approach to social research specifically designed for inquiries into complex multivariate events (Shye, 1981). At a later stage of a facet theory designed research project, a range of multidimensional scaling procedures has been developed for use as data reduction and theory/hypothesis testing devices (Borg, 1981;Borg, Groenen, & Mair, 2012; duToit, Steyn, & Stumpf, 1986). When using a mapping sentence approach, calculating intercorrelations between observations empirically tests the sentences' inherent hypotheses. The pertinence of the facets and their elements as stated in the research's mapping sentence. However, detailed consideration of analysis procedures is beyond the scope of this paper. It is important to note that facet theory is little used as a post-hoc data reduction method, rather when employing facet theory,

an expected structure for the observations / data is stated as a mapping sentence before data collection and these structural hypotheses are subsequently investigated.

The definitional scheme used in facet theory is proposed in the format of a mapping sentence, which comprises a series of multiple variables and hypotheses regarding the empirical relationships between variables. Within a mapping sentence three types of sets need to be clearly defined: (1) the population whose members are to be classified; (2) the variables that will be investigated and classified; (3) the range of responses that will be observed during the research. A mapping sentence is tailored to suit a specific investigation, enabling this definitional system for observations to be in a form in which the researcher may readily see the correspondence (or lack of such) between theoretical hypotheses in the sentence and systematic relationships in the data gathered.

A mapping sentence may be thought of as a tool that requires an individual, or sample members from a study population, to supply, yield or to be observed, committing a response to a question or other specification of problem or uncertainty. Response behaviors that will be recorded are specified to each question or observation defined by a specific mapping sentence facet profile. Through the systematic, and sometimes exhaustive combination of single facet elements with single elements from the other facets in the mapping sentence, the researcher can have confidence that the entirety of the research area of interest is being thoroughly and adequately surveyed. Moreover, the mapping sentence, and the development of research tools based upon this procedure, enables observation of the relationships between the facets within a research domain. Having considered some of the theoretical aspects of facet theory, attention will now be turned to the applied usage of the theory. As this paper proposes a mapping sentence for international students' experiences, the next section will consider how facet theory has been used in research contexts.

Applications of Facet Theory

The facet approach has been used widely as an exploration and theory development technique in the investigation of many areas of human behavior such as: social values (Hackett, 1995a; Levy, 1986; Levy & Guttman, 1985); personal and social attitudes (Guttman & Levy, 1982); self-esteem (Dancer, 1985); students' course evaluations (Cohen, 2000, 2005); ethnic identity within educational contexts (Cohen, 2004); university students' quality of life (Cohen, Clifton, & Roberts, 2001); students engagement (Assor, Kaplan, & Roth, 2002); student acculturation (Treister, 2005), and pertinent to the current paper, understanding college student's feelings of academic challenge, (StClair and Hackett, 2012a, 2012b), and understanding ethnic discrimination (Kanavou, 2003). Central to all of the above studies is the employment of clear and precise definitions of the content of the research areas through the use of a mapping sentence designed specifically for each of these specific content domains.

Facet theory approach identifies empirically valid components of a research area and specifies how these segments may be combined in a way that is realistic to the study's population (see Canter, 1985 for a wide ranging introduction to the area of facet theory research). It is therefore imperative when commencing the design of a research project to ask the questions: How can a clear and unambiguous definition of a content area be developed? The first step to answering this question is to perform a review of existing research literature from the specified research domain to identify variables that have been previously found to be pertinent. The research that follows then asks the question, "What, if any, relationships exist between the variables and the observations that will later be carried out during the research?" The facet theory approach is particularly appropriate for assembling a definition of students' experiences due to its clarity and exactitude (Coombes, 1964).

Turning to the personal experiences of international students, it is possible to make an initial attempt to apply the facet theory approach to this content domain. In this endeavor, the variables (or facets) to be employed to characterize student's experiences must first identified. By collecting all of what is believed to be the important domain facets (or essential components of the content domain based upon previous research findings that have been highlighted earlier in this article), it is possible to define the construct (facets) of student experience in mapping sentence format linking facets using everyday connective language to suggest the relationship between the facets. Therefore, a mapping sentence is a series of hypotheses about this research domain. If the mapping sentence is supported through later data analyses it may be used to design research in this area and may thus produce potentially comparable and cumulative research findings and generate valid and reliable knowledge.

What follows is an *initial* mapping sentence that describes the important elements of international students' experiences of studying abroad. The sentence is an initial mapping sentence as it is the basis for future research but has not yet been subjected to empirical validation through such empirical research efforts. This mapping sentence has been constructed by bringing together factors identified as pertinent within the extant research of the domain.

Figure 1. Mapping Sentece of International Students' Experiences

Using the Mapping Sentence

The mapping sentence (Figure 1) for international students' experiences portrays the content area in such a way that researchers are able to both understand the holistic domain whilst while the sentence's structural account enables the design of specific research breaking experiences down by user meaningful facets. For each research project, a respondent, or sample of respondents, may be classified under one element from each of the first three facets (facets A to C). These facets are 'background' facets with each element depicting a characteristic of the international student. The Age (A) facet is divided into younger and older elements although this division may be changed to be actual year of age or other age bands dependent upon the specific study's needs. While Gender (B) has relatively fixed elements, a specific study may be interested in gender identification, which would necessitate the inclusion of other 'gender self-identification' elements. Facet Level (C), educational level, incorporates two elements in the mapping sentence (undergraduate and graduate), although this may be broken down (school year, etc.) and expanded (PhD, high school student, etc.) as necessary to reflect other important divisions within the educational system.

In designing an instrument, such as questionnaires, interview or observation schedules, etc., a single element from each and all of the four content facets (facets D to G) is selected and a question/observation developed that embodies the selected elements within the contextualized content: These content facets identify the substantive content of international students' experiences. The Source (D) facet identifies the loci of the source of experience as being located in the student's own experiences or in that of other persons. This facet may be refined to include other, more specific sources (teachers, family, friends, etc.). The Discrimination Focus (E) facet has ten elements, which reflect the '*basis*' upon which discrimination has occurred. These are derived from previous non-facet driven research into the forms of discrimination to which the international student may perceive himself or herself to have been subjected. The facet elements relate to cultural norms, race, ethnicity, gender, physical features, language, accent, immigration status and student's name. This is a rather broad selection of discrimination forms that may be reduced or supplemented for any given study. The Facet of Event (F) has four elements that embody the '*kind*' of event the international student has experienced because of their international student status. This facet has the physical, sexual, language related elements, or a mixture of these elements. Both this facet and the Consequence (G) facet may have elements adapted to study needs. This final content facet (G) concentrates upon the outcome of the event upon the international student and has three elements: confusion (in how to react to the negative event), distress (generalized stress), wounded emotions (damaged confidence and dignity). The final facet in the mapping sentence is the Range (R) which is the range over which responses are gathered, and which again may be contextualized as needed.

By choosing elements from each facet and designing research enquiries so as to incorporate these elements, the researcher is able to ensure covering the entirety of the research domain. Thus, a mapping sentence's structure ensures both uniformity and flexibility: the mapping sentence is uniform in that it provides a template within which observations are designed, undertaken and analyzed. It is flexible as the *type* of content rather than the *actual* questions to be asked is delimited allowing the freedom to contextualize instruments to specific research questions.

Examples of possible questions that may be developed using the international students' mapping sentence are shown below. In these examples elements from the content facets are combined to form questions (the specific elements in each question are given in each question's facet element profile):

What level of reaction did you have to the personally distressing verbal racial attack upon yourself? - mild to severe *(facet element profile: d1, e2, f3, g2)*

When you read about the reports of sexual attacks, to what extent was your confidence effected? - mild to severe   *(facet element profile: d2, e1, f2, g3)*

Data that arises from facet theory designed investigations is analyzed using a variety of non-parametric multidimensional scaling procedures (SSA, MSA, POSAC), predominant amongst which is SSA (Smallest Space Analysis) to reveal similarity present in a data set. SSA results in an array of "n" plots. In each of these plots items that are similar (highly correlated) are positioned adjacent to each other in a two-dimensional projection. Interpretation of the item plots is then conducted by reference to the mapping sentence and regions are looked for in the output plots that correspond to the mapping sentence used for the research's design. In these plots, regions of any shape are drawn to capture items with common facet elements (see the texts by Borg, 2010, 2012a&b, for an applied description of these and other approaches to the analysis of multidimensional data in which data is analyzed so that variables may be positioned in "n" dimensional space to represent the underlying non-metric correlation structure of the data).

Conclusions

The facet theory mapping sentence template and the understanding inherent within this model are not intended to be the only or even the definitive model for understanding international students' experience of studying abroad. Rather, the proffered mapping sentence stands as a structural template that may be adapted and fitted to the particular circumstances of future research projects that attempt to develop understanding of this research domain. Future research may adapt the mapping sentence to reflect a different and growing body of research that addresses the life experiences of international students.

Research that has been conducted into the lives and experiences of international students has often been embarked upon as if no research had previously been undertaken in this area. By this I mean that research is often designed to fit a specific issue international students are encountering in a specific educational location. Previous research is typically not used to design the research instrument for the new study and therefore the new results are frequently not directly comparable with previous research findings and consequently do not directly build upon existing knowledge. This has resulted in individualistic studies that have not developed a clear definition of the international student in reference to the possible negative experiences students may encounter.

This circumstance is analogous to a situation in which a study is being conducted into the qualities and usability of a "Ford" motor car, with another study looking at a "Datsun" motor car and yet another looking at a "Dodge" motor car, but with no clear definition or understanding of what a motor car is. In this situation what is happening is not research but taking a non-cumulative series of snap shots of the subject (cars) of interest. It would not be surprising in this circumstance that the results produced may bare little in common, be difficult to compare and avail only a fragmented and disorganized understanding of what constitutes a motor car. Returning to the international student, the lack of a clear definition of student experiences has led to a body of research literature with conflicting results. The proposed mapping sentence offers a template that may be adapted to specific areas of research interest and produce findings that may be directly related to each other. The unambiguous definition provided in the mapping sentence has the potential to allow the development of a body of cumulative knowledge. Future research is needed that uses the mapping sentence and gathers empirical data to test the hypotheses inherent in its structure.

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