



## **Concept Learning in the Undergraduate Classroom: A Case Study in Religious Studies**

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Popularized by the work of Jerome Bruner in the mid-1990's, the "Concept Attainment Model" is a process of structured inquiry that requires students to make generalizations and draw conclusions from examples (and non-examples) of a particular concept toward developing new insights, hypotheses, and associations regarding what they have previously learned (Bruner, 1977). In order to broaden some of the typical assumptions about the manners and conditions in which it can be effectively employed in the undergraduate classroom, this qualitative research study offers an example of the Concept Attainment Model in action in the teaching of traditional just war theory in an undergraduate religion class. Data was collected and analysed according to Spradley's qualitative research methodologies (Spradley, 1980). Among the most important findings of this study is that in a religion or similar humanities course, the Concept Attainment Model is most likely to find success when highly scaffolded by the instructor.

Keywords: Concept Attainment, Undergraduate Education, Religious Studies

### **INTRODUCTION**

Over the past several decades, increased emphasis has been placed on the role of conceptual understanding and growth at the undergraduate level. According to Harward (2011), intellectual growth and attainment of dispositional development are not only goals but also means of sustaining a viable undergraduate education program. No longer does a four-year degree solely indicate the successful memorization of facts, but also the capacity to problem-solve, think critically, and behave with desired social and emotional skills (Svinicki & McKeachie, 2010; Barr & Tagg, 1995; Svinici, 2004). Developing the intellectual, social and emotional dispositions of undergraduate students requires the use of learner-centered instructional techniques and a shift from traditional paradigms to a focus on student learning (Bain, 2004; Barkley, 2009).

Towards this end, increasing attention at the undergraduate level has been placed on instructional strategies that foster concept-based learning. One widely accepted model, set forth by Jerome Bruner, is the "Concept Attainment Model." Based on the basic operational structures inherent in how humans learn and come to understand new concepts, the Concept Attainment Model is a discussion-based process of classification and inquiry in which students collectively develop an understanding of attributes of a group or category (Bruner, 1977). Combining concrete examples of a given concept with a classroom structure that promotes student collaboration, the Concept Attainment Model can in principle be used to teach almost any concept in any discipline (Pritchard, 1994).

Yet despite the promise and popularity of this model, there have been two obvious shortcomings in how scholars and educators have typically handled it. First, relatively little research has been done on its application in the undergraduate classroom. Most studies have generally focused rather on the elementary and secondary levels (Kennedy, Fisher & Ennis, 1991; Sternberg, 1986; Oxman & Weinstein, 1993; Paul 1993; Lipman, 1988). Even B. Joyce and M. Weil, who very compellingly use Bruner in creating a learning model in which teachers and students work cooperatively to develop, test, modify, and draw conclusions from collectively-formulated hypotheses, base their findings on field work that has only been done in elementary and secondary classrooms (Joyce & Weil, 1986). Second, to the extent that the Concept Attainment Model has been used in undergraduate teaching, it has historically been done mostly in such disciplines as science, chemistry, biology, and math (the "hard sciences"), but hardly at all in the humanities. Considering that Bruner himself called the Concept Attainment Model an instructional strategy that is not context- or age-specific, but rather congruent with how all humans learn, no matter what the field or subject matter, this neglect is unfortunate.

As a step toward remedying both of the above deficiencies, then, this study will explore the application of the Concept Attainment Model in an undergraduate religion course in a small private University in Western New York. In addition to offering some much-needed data regarding the use of this model on the post-secondary level, it will also exhibit one way in which it was successfully applied in a humanities course and thus implicitly serve as a possible model for future applications in similar courses.

In this case study, the guiding research question was as follows: "Under what conditions and in what capacity can the Concept Attainment Model be used in the undergraduate religion course?" As will be explained, the most significant finding was that the success of this model had everything to do with the work the instructor did in scaffolding and guiding the class discussion. This observation becomes useful, first, in responding to the common criticism that this model excessively leaves students without structure or direction (Tobias & Duffy, 2009), and second, in recommending how the Concept Attainment Model might be used by other teachers in undergraduate humanities courses.

### **The Concept Attainment Model in Action**

The instructional strategy of the Concept Attainment Model is founded upon the understanding that people learn new information and develop conceptual meaning in highly individualized and constructive ways. Due to the diversity of observations and experiences, humans naturally categorize and group information based on common characteristics they perceive and then make generalizations about the group formation. Bruner (1977) generalized this physiological principal to the classroom and offered to teachers a means by which the same conceptual formation event could take place for academic concepts. This process is highly structured, as it is designed to help students investigate the attributes of a given concept and then craft generalizations based on examples and non-examples.

According to Bruner (1977), the Concept Attainment Model has three major components. First, the teacher chooses a concept to be developed. Second, through a variety of given examples (some which exemplify the given concept better than others), students attempt to generalize the attributes of this concept and create hypotheses about its characteristics. Finally, students test and evaluate the hypotheses they have made by applying their new understanding to a novel or extension task. While variations of this model exist, the fundamental premise behind the Concept Attainment Model is that *students* must be the ones to consider examples of a conceptual category, test their initial categories against further examples (and non-examples), and, finally, generate a set of critical attributes that define the concept they are learning.

After considering the underpinnings of Bruner's model, it may be tempting to dismiss the Concept Attainment Model as strictly useful for the acquisition of elementary concepts. Indeed, as indicated earlier, much of the research on the Concept Attainment Model has been with school-aged children (Johnson, Carlson, Kasti & Kasti, 1992; Driver & Easley, 1978). As this paper will now turn to show, however, the Concept Attainment Model can indeed be successfully applied in post-secondary education. What follows is a case study of it in action in an undergraduate religious studies classroom.

### **METHOD**

This case study is drawn from data collected during a course at Niagara University called "Christian Visions of the Human Person". Niagara University is a small liberal arts university in Western New York with an undergraduate student population of approximately 3,300. In this 16-week course, the cognitive student learning objectives were to (a) develop a basic understanding of Christian theological anthropology and ethics and (b) to develop the capacity to "think theologically". The course used both traditional and contemporary Christian sources to explore concepts including sin, grace, freedom, and conscience as well as how they related to current issues in family, church, and society. This course had approximately 30 students and met three times a week for 55 minutes each class.

The particular class that is the focus of this case study occurred fourteen weeks into the semester. As part of the ongoing program, students considered the just war theology of Thomas Aquinas, a famous thirteenth-century theologian, as articulated in his *Summa theologiae* (Part 2-2, Question 40, Article 1). Students read excerpts from this text and discussed it both in small groups and as a class.

### Data Collection

The protocols of qualitative data collection methods were used in this study. Following the research protocols set forth by Spradley (1980) and Glesne (1999), the researcher worked as a participant-observer, fully participating in the classroom activities while also documenting information relevant to this study. Hand-written field notes were recorded during the class period and then elaborated upon within several hours of the class's completion to ensure that data were collected sufficiently. These notes were combined with course documents, student and teacher interviews, as well as other relevant course materials to create a holistic and trustworthy account of the events that took place.

To increase the validity of this piece, specific attention was placed on triangulating data from multiple sources. Criswell & Miller (2000) states that the process of triangulation increases the reliability of qualitative research by forcing the researcher to "search for convergence among multiple and different sources of information to form themes or categories in a study" (p. 126). In this piece, data was triangulated from classroom observations, informal interviews with students, and meetings with the professor. These different means of data collection were collectively used to look for meaning in the data.

Class began with a reading from Aquinas's *Summa theologiae* on just war theory, specifically on the conditions that must be met for a conflict to be considered "just." The passage was read aloud by student volunteers. This exercise was designed to provide necessary background information and a minimal familiarity with Aquinas's argument so that students could formulate initial conceptual hypotheses. As the students discussed the meaning of each of Aquinas's conditions for a just war, the professor took notes of the conversation on the board, asking probing questions as students shared their initial interpretations and reactions.

Sometimes the professor encouraged students to try to "put it in their own words" as they worked through each section, helping to scaffold generalizations of the attributes of the "just war" concept and create hypotheses about its characteristics.

After briefly exploring Aquinas's just war theory, students' attention was then directed to a series of real-life examples designed to help them put the principals of Aquinas's theory into a series of authentic contexts. Although the examples dovetailed with then-contemporary political affairs and debates, the discussion was in no way intended to be partisan, only illustrative of real-world conditions. These examples included:

- (1) There is a question about whether or not weapons of mass destruction are being harbored in a foreign country. Some experts say yes and other say no. You are a high-ranking government official, and you are told that if you do not go into the country and seize these weapons, this country could attack in six-months' time. It is also quite possible that there are no weapons at all, and thus you would be attacking for no good reason. If you decide to invade and seize the weapons, does this count as a just war according to Aquinas?
- (2) A nation is known to harbor terrorists. Although obviously not everyone in the nation is a terrorist, you are a high-ranking government official who must decide whether or not to go to war with this country. It is unclear what the cost will be. There could be 1000, 2000, any number of casualties. Does the fact that this country is known to be harboring terrorists substantiate cause for a just war according to Aquinas?
- (3) You get a phone call from the President of the United States who summons you to the White House right away. He explains that he has recently obtained access to a time machine, and you must go back to pre-World War II Germany, find Adolf Hitler, and kill him. Although he has not assumed any substantial political power yet and seemingly poses no threat, would you kill him? If so, at what age would you kill him? As a baby? Most importantly, according to Aquinas's conditions of a just war, would killing him be just?

In exploring each example, students were able to test and evaluate the observations and hypotheses they made in the previous portion of the lesson. The instructor respectfully but persistently reminded students to justify their thinking with evidence in Aquinas's text and redirected them as needed. In accordance with Bruner's model, this portion of the lesson helped students test their previously generated notions about a just war (according to Aquinas's framework) and ask questions about the judgments their classmates were making. It is important to note that this portion of the lesson was largely student-discussion based and heavily reliant both on students' interaction with each other and with the text. After each scenario was presented, time was allotted for small-group discussion and evaluation before any whole-group discussion would occur.

To conclude the lesson, students in this class participated in a culminating activity designed to allow learners to apply their developing understandings in a novel way. For this, students were directed back to the examples supplied previously and were given time to add "something" to them to make them more ideal exemplars of Aquinas's just war theory. In this evaluation activity, not only did students work from text-based evidence but worked collaboratively to refine and elaborate on their developing conceptual understanding. After sharing their additions with their classmates, the professor provided feedback to student ideas when appropriate, interjecting both further clarification and more questions.

The class ended with several minutes for student teams to answer a series of final application questions for Aquinas's just war theory. Looking for students to understand

not only the concept but also its place (or lack of a place) in contemporary ideals, the professor gave students the last several minutes of class to contemplate the following question:

- (1) Are Aquinas's just war conditions appropriate for today (given they were written in the 1260's)?

As students worked in their groups, small-group and whole-group feedback was given. Students were continuously directed back to the text not only to elaborate on their insights but also to challenge and to build off each other's ideas.

### **Data Analysis**

After data was collected, Goetz & LeCompte's (1981) model of analytic induction was used to sort and draw meaning from the data. Accordingly, comprehensive and logical theories were created through the systematic analysis of gathered evidence rather than through the reliance on previously established theories. Instead of beginning data collection with a pre-established lens, the method of analytic induction enabled the researcher to take a systematic generative approach to drawing conclusions, a method which was deemed appropriate given the purpose of this study was to explore the conditions and capacities in which the Concept Attainment Model can be used in the undergraduate religion course.

According to their 1981 article "Ethnographic research and the problem of data reduction," Goetz and LeCompte state that there are six steps to analytic induction in qualitative research. These steps were drafted after their comprehensive review of the processing and interpreting qualitative data. Their process begins with:

- 1) scanning of data collected to identify categories and attributes,
- 2) additional scanning of the data for additional examples of each category,
- 3) creating typologies for each category,

In this research study, these steps were followed in a recursive and interactive way. Using evidence from the collected data, categories were identified and attributes of each were derived from field notes, student work, and teacher interviews. From this analysis, two broad, encompassing categories were created that answer the overall research question, "Under what conditions and in what capacity can the Concept Attainment Model be used in undergraduate religion course?" They were:

- (1) Concept attainment must be highly scaffolded and contain both opportunities for student discovery as well as teacher elaboration and direction.
- (2) Application and extension of student thinking throughout the lesson is key to maximizing the instructional possibilities of the Concept Attainment Model.

Elaboration of these findings will be explored below.

## FINDINGS

This case study implicitly serves as an important illustration of the Concept Attainment Model successfully put in action in a humanities course. First, it is important to note that the above example of this model is a highly scaffolded and structured strategy. A common critique of this model (and others highly constructivist in nature) is that they lack direct instruction and that students are largely left unguided to invent their own conceptual understanding (Tobias & Duffy, 2009). However, as was made clear, the instructor played a critical role in establishing not only the examples for students to consider but also in providing specific, concrete, and actionable feedback so that students leave with a conceptual understanding that is in tandem with accepted understandings. Consider the examples from this case study. These were authentic because they mirrored real-life current events but were also modified in order to foster non-partisan discussions among students. Scaffolding played an important part in the concept-attainment process and was obviously a major component of the planning that preceded the use of this strategy.

Furthermore, it is also important to recognize that application and extension of students' developing conceptual understanding was critical. In the above case study, not only were students provided with important background information and had conversations with others to develop and further their understanding of Aquinas's concept of a just war, but also they ended the lesson by answering evaluative questions. By considering Aquinas's notion and discussing such questions as, "Is Aquinas's just war theory still appropriate for today? Is it still adequate?" students were asked to further their understanding while bringing meaningful closure to the lesson.

## Conclusions

In this case study, Bruner's Concept Attainment Model was explored in the undergraduate religion classroom. Using the qualitative research methods of Spradley (1980) and Glesne (1999), details regarding this instructional approach and its utility in the higher education setting were considered. Despite the fact that much of the current research on the Concept Attainment Model is in elementary and secondary settings, this case study provides one example of how this model was used at the post secondary level.

These findings are consistent with previous research in the elementary and secondary school setting where application of Bruner's Concept Attainment Model provided educational benefit to diverse student populations (Kennedy, Fisher & Ennis, 1991; Sternberg, 1986; Oxman & Weinstein, 1993; Paul 1993; Lipman, 1988). While beyond the scope of this paper, in other settings this concept attainment model has been found to be more effective in raising the achievement of pupils than that of the control group (Basapur, 2012). This may be a worthwhile area for further research and discussion related to the Concept Attainment Model in higher education settings.

Based on the data collected for this case study, at least two recommendations to other professors looking to implement the Concept Attainment Model, particularly in a

religion or other humanities course, can be made. First, like other constructivist approaches, teacher-scaffolding and feedback is key. Students cannot develop a true and meaningful conceptual understanding without carefully selected examples, opportunities to explain the quality of those examples with others, and feedback about their thinking. Second, an evaluative component of the Concept Attainment Model lesson is also important as it force learners to think critically about the concept they are exploring in a higher level. By asking questions that force learners to engage in higher-order thinking and place judgments on the concepts they are learning, greater conceptual understanding will occur.

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#### **Turkish Abstract**

##### **Lisans Sınıfında Kavram Öğrenimi: Din Çalışmalarında Bir Durum Çalışması**

Jerome Bruner'in 1990ların ortalarındaki çalışmasıyla popüler olan "Kavram Edinimi Modeli" öğrencilerin belirli bir kavramla ilgili daha önce öğrendikleriyle bağlantılar kurmak, hipotezler geliştirmek ve yeni anlayışlar geliştirmek adına öğrencilerden belirli kavramla ilgili örneklerden genellemeler ve çıkarımlar yapmalarını gerektiren yapılandırılmış araştırma sürecidir (Bruner, 1977). Etkili bir şekilde lisans seviyesinde kullanılabilecek durumlar ve tutumlar hakkında tipik bazı varsayımları çoğaltmak için, bu nitel çalışma lisans seviyesindeki bir din dersinde geleneksel savaş teorisinin öğretiminde Kavram Edinimi Modelinin bir örneğini sunmaktadır. Veriler

Spradley'in nitel araştırma metoduna göre toplanmış ve analiz edilmiştir (Spradley, 1980). Bu çalışmanın en önemli bulgularından biri bir din ya da benzer insan bilimleri derslerinde Kavram Edinimi Modelinin dersin öğretim elemanının yüksek seviyede destek vermesiyle başarıya ulaşacağıdır.

**Anahtar Kelimeler:** Kavram edinimi, lisans eğitimi, din çalışmaları

#### French Abstract

#### Concept Apprenant dans la Salle de Classe en Licence: Une Étude de Cas dans Études Religieuses

Popularisé par le travail de Jerome Bruner au milieu des années 1990, "le Modèle d'Accomplissement de Concept" est un processus d'enquête structurée qui exige que des étudiants fassent des généralisations et tirent des conclusions d'exemples (et des non-exemples) d'un concept particulier vers le développement de nouveaux aperçus, des hypothèses et des associations quant à ce qu'ils ont précédemment appris (Bruner, 1977). Pour élargir certaines des suppositions typiques des manières et des conditions dans lesquelles il peut être efficacement employé dans la salle de classe en licence, cette étude de recherche qualitative offrent un exemple du Modèle d'Accomplissement de Concept dans l'action dans l'enseignement de traditionnels juste la théorie de guerre dans une classe de religion en licence. Les données ont été rassemblées et analysées selon les méthodologies de recherche qualitatives de Spradley (Spradley, 1980). Parmi les découvertes les plus importantes de cette étude est que dans une religion ou un cours d'humanités semblable, le Modèle d'Accomplissement de Concept est le plus probable de trouver le succès quand fortement scaffolded par l'instructeur.

**Mots-clés:** Accomplissement de concept, formation pre-licence, études religieuses

#### Arabic Abstract

#### فكرة التعلم في الفصول الدراسية الجامعية: دراسة حالة في الدراسات الدينية

أن "Concept Attainment Model" أصبحت شعبية يعمل Jerome Bruner في منتصف عام 1990، و "Concept Attainment Model" هو عملية التحقيق المنظم الذي يتطلب من الطلاب جعل التعميمات واستخلاص النتائج من الأمثلة (وغير أمثلة) من مفهوم معين نحو تطوير تصورات جديدة، الفرضيات، والجمعيات حول ما تعلموه سابقا (برونر، 1977). من أجل توسيع بعض الافتراضات النموذجية حول آداب والظروف التي يمكن أن تستخدم بشكل فعال في الفصول الدراسية الجامعية، فإن هذه الدراسة البحثية النوعية تقدم مثالا على "Concept Attainment Model" في العمل في تدريس نظرية الحرب العادلة التقليدية في الفصول الدين في الجامعية. وقد تم جمع البيانات وتحليلها وفقا لمنهجيات البحث النوعي في Spradley (1980، Spradley). من بين أهم نتائج هذه الدراسة هو أن في الدين أو الإنسانية مماثلة بطبيعة الحال، هو الأكثر احتمالا للعثور على النجاح عندما يسقل كبيرا من قبل المدرب "Concept Attainment Model".

الكلمات المهمة: مفهوم التحصيل، التعليم الجامعي، الدراسات الدينية،