

An Objectivist-Constructivist Blended Approach for Teaching University-Level Beginner String Technique Class: A Conceptual Framework

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Abstract

The use of learning theories has captured the interest of music educators around the world. A wealth of literature is available on the use of learning theories associated with the music learning classroom. Literature has shown that constructivist approaches have been widely promoted as a new paradigm in music classroom teaching, given that principles of constructivism foster an atmosphere conducive to enhancing students' potential. One of the most perplexing problems in employing constructivist approaches is that the objectivist method has long been the core approach in many institutional practices. The examination of literature has shown that a few studies have attempted to blend the two approaches together. These studies demonstrated that a blended approach is an ideal solution in dealing with adapting constructivist approaches as a replacement for objectivist approaches. Since these practitioners succeeded in employing blended approaches in their respective fields, the researcher believes that a blended approach is also suitable for music education. This article sets forth a conceptual framework that seeks to elucidate the composite teaching and learning instructional materials for university-level beginner string technique classes, and incorporates the instructional system design posited by Dick and Carey, along with integration of a blended objectivist-constructivist epistemological approach. Both practitioners in education and music education might find the article useful, as it provides an informative and useful framework for them to personalize and adopt this new paradigm in their daily teaching routine towards becoming more efficient and effective educators.

Keywords: Objectivism, Constructivism, Beginner String Technique, Instructional design

INTRODUCTION

Teaching students to play string instruments is a challenging task. In his 2004 paper, Przygocki asserted that:

As the 20th century ends and the 21st century begins, string teachers can look back over a remarkable period in music education. The quantity and quality of pedagogical approaches developed during this time are exciting and inspiring. String teachers, however, can be so involved in the technical demands of their instruments that they overlook some wonderful resources and methods (p.44).

He further explicated that teachers often integrate a combination of teaching methods and approaches by well-known string pedagogues' to best suit their students' needs in teaching beginner string techniques. In creating a curriculum for beginner string player, Przygocki (2004) proposed that teachers should consider specific factors in the teaching and learning process, namely the students' age and background, and the amount of available instructional time. In the context of teaching beginner string technique classes in Malaysian university, the researcher was able to identify several factors that need attention. Educators in Malaysia need one set of comprehensive instructional materials which is appropriate for teaching university-level classes. Additionally, this instructional material should be both comprehensive and suitable for a 14 weeks course.

In a typical music classroom, different types of learning are involved in the process of acquiring knowledge, such as playing an instrument, memorizing, acquiring new skills, and listening. For beginner string players, some important goals are to attain good posture, right-hand and left-hand

positions, bowing skills, music-reading skills, and intonation. Thus, teachers in the music classroom need to be proactive in organizing daily teaching routines, and mindful that one teaching method might not work for all students or in all circumstances. In this regard, Isbell (2012) advocated that:

If music educators are to be successful in meeting the needs of diverse student populations, they will need to not only understand multiple theories of learning but also know when a specific approach is most appropriate for a given situation (p.19).

Isbell (2012) clarified further that music educators should be smart in terms of understanding learning theories in music, savvy in terms of their personal teaching style and how this influences teaching effectiveness, sensitive towards the diversity associated with the music learning environment, and proficient enough to teach using a variety of teaching approach.

To formulate theoretical perspective for effective teaching practice, learning theories provide educators with a useful prototype. Ertmer and Newby (1993) emphasized that understanding and defining how people learn is essential whenever we seek to enhance what people know or do. In the current study, understanding of learning theories provides researchers with a useful perspective for planning and constructing effective instructional materials for teaching university-level beginner string technique classes.

Theoretical approaches to learning are a key aspect in teaching and learning practice. These theoretical frameworks are end results of educational research conducted in a variety of settings (Zeedick, 2010). Additionally, these epistemological frameworks have been primarily developed outside the music education sphere. Taetle and Cutietta (2002) noted three approaches to learning: behavioral, cognitive, and constructivist. Meanwhile, Fautley (2010) in discussing theoretical approaches to learning, categorized learning theories into three viewpoints; that is, behaviorist, constructivist, and socio-cultural.

The earliest learning theory comprised the epistemology of behaviorism developed based on works by Pavlov, Watson, Thorndike, and Skinner (Isbell, 2012; Mergel, 1998). The basis of this learning theory is that human behavior is influenced by external aspects. This learning epistemology promotes the idea that new behavioral patterns should be repeated until they become a routine.

Cognitivism, on the other hand states that changes in behavior should be observed and used to further understand the learner's mind (Mergel, 1998). In other words, as Taetle and Cutietta (2002) elaborated, that "cognitive theories focus on efforts to map an individual's learning process as new information is integrated with already familiar knowledge" (p.282).

A third learning theory, constructivism promotes the idea that learners construct their own perceptions regarding the world around them through individual experiences. Learning in this manner enables individuals to comprehend confusing situations. The main tenets of constructivism are creativity and active learning (Webster, 2002).

Behaviorism and cognitivism both support the concept that complex activities should be broken down into smaller and more manageable tasks, and that mastery is essential before advancing to the next level. In contrast, Mergel (1998) asserted that constructivism "promotes a more open-ended learning experience where the methods and results of learning are not easily measured and may not be the same for each learner" (p.15). In several studies (Chen, 2007; Cronjé, 2006; Jonassen, 1992; Mergel, 1998), behaviorist and cognitivist approaches have been referred to as objectivist, since both epistemologies are similar and are objective in nature (Mergel, 1998). In explaining the difference between the two concepts, Jonassen (1992) explicated that "the two theories are generally described as polar extremes on a continuum from externally mediated reality (objectivism) to internally mediated reality (constructivism)" (p.8).

Recent research on teaching and learning music has focused on creating a constructivist learning environment. According to Scott (2010), "constructivist learning theory emphasizes that students actively relate new information to what they already know and reshape their previous knowledge to make way for new understanding" (p.21). This active "minds-on" learning, as proposed by Scott (2010), is appropriate for the general music classroom since students are performers, creators, and listeners within their daily routine as music students. Studies of the impact

of constructivist learning have tended to explore the effect of constructivist teaching strategies such as exploration, experimentation, and communication on student achievement.

Communication is a vital element in teaching and learning processes in the field of music teaching. Communication in music teaching generally involves facial expressions, gestures, and body language to communicate musical concepts (Vandivere, 2008). Specifically, Casey (1991) classified communication into two basic categories, verbal and non-verbal. Communication is an important teaching strategy for teachers to reflect on whether students are getting the correct information and whether all their needs are being fulfilled (Vandivere, 2008).

Exploration as a teaching strategy in music allows students to analyze musical scores analytically either by seeing or hearing, and creatively working through each element imaginatively. Moreover, through exploration, students will be more inspired to work in a way that goes beyond the materials on offer. Holsberg (2009) suggested that exploration can be implemented in teaching music through composition, experimentation, and improvisation. Experimentation as a teaching strategy assists teachers in nurturing creative thinking and creativity in the music classroom.

Apart from the abovementioned teaching strategy, modeling is another approach that has been proven to be effective in enhancing the learning process (Haston, 2007). This objectivist teaching strategy allows students to learn through imitation. In music education, teachers demonstrate the required behavior by using vocal or instrumental models (Tait, 1992).

CONCEPTUAL FRAMEWORK

The literature review examined several reviews on research related to teaching university-level beginner string classes; specifically, it considered literature on the objectivist and constructivist blended approach, instructional design, components of instructional design, teaching strategies, as well as assessment and evaluation in music education. For the most part, these studies have concentrated on particular factors of the teaching–learning process and their influence on teaching efficiency. Each of these areas was critically analyzed to enhance understanding of the principles underlying teaching string ensembles. In the following, the conceptual framework for this study was generated based on this literature review. Figure 1 provides an illustration of a literature map that shows a visual summary of the literature reviewed to provide direction for the study.

The literature review demonstrated extensive approaches by scholars to integrate learning theory epistemology and an instructional design model to enhance the teaching and learning process in music education in general. However, application of this methodology in teaching university-level beginner string technique classes has been sporadic. For this reason, this study aims to design effective and efficient instructional materials for university-level beginner string technique classes by uniting the spheres that have been highlighted in the different music education studies.

At the outset, the literature review provided a theoretical background of the epistemology of behaviorist, cognitivist, and constructivist theories. Ertmer and Newby (1993) emphasized that understanding and defining how people learn is essential whenever we seek to enhance what people know or do. In the current study, understanding of learning theories provides the researcher with a useful framework on which to plan and construct effective instructional materials for teaching university-level beginner string technique classes. Integration of the objectivist and constructivist learning approaches has been documented in a plethora of published reports. Nevertheless, to date, relatively little research has documented these learning approaches in a Malaysian educational setting, despite the range of available articles. As the literature has examined these learning approaches from pre-kindergarten through university level, and indeed in other areas, it is also considered useful to educators to have examples from local Malaysian practice settings upon which they can reflect. To address this shortfall, the present study strives to delineate the process involved in turning objectivist and constructivist learning approaches into unified actions, such that Malaysian educators can personalize and adopt these approaches in their teaching practice.

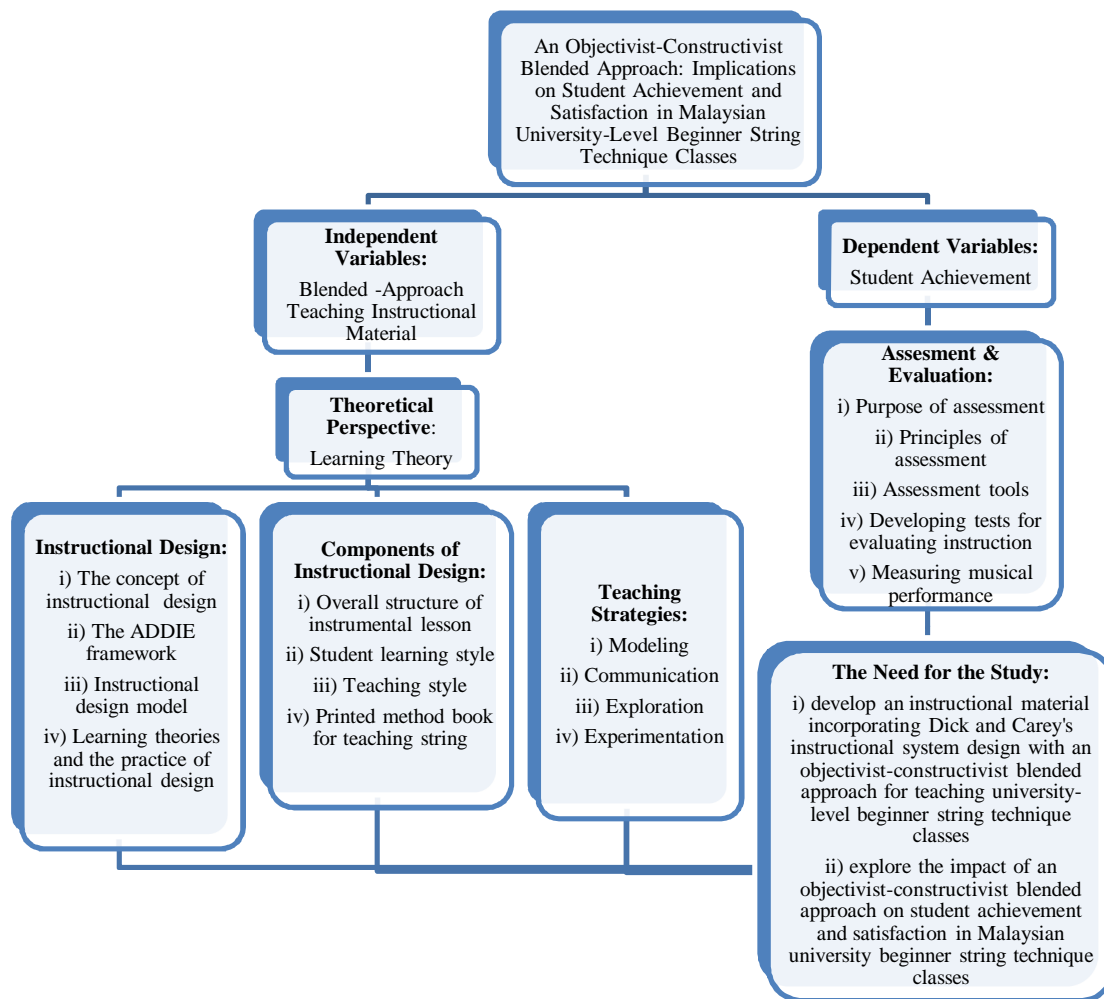


Figure 1 Literature Map

While the literature reviewed in this study agrees that the constructivist approach has become a new paradigm as a replacement for objectivist teaching and learning approaches, it is crucial to realize that not all of these changes have been welcomed. Educators may still have to contend with professional and institutional constraints in order to embrace a constructivist paradigm exclusively, since the objectivist method has long been the core approach in many institutional practices. The examination of literature has shown that a few studies have attempted to blend the two approaches together. For example, Bellefeuille (2006), Chen (2007), and Tuckman (2002) shared their experiences concerning blending objectivist and constructivist approaches. These studies demonstrated that a blended approach is an ideal solution in dealing with adapting constructivist approaches as a replacement for objectivist approaches. Since these practitioners succeeded in employing blended approaches in their respective fields, the researcher believes that a blended approach is also suitable for music education. In this study, certain issues have been identified, one of which is time constraints faced by educators in teaching university-level beginner string technique classes. Chen (2007) detailed her experiences of using a blended approach of constructivism and objectivism to overcome problems associated with instructional time constraints pertaining to an

intensive online course. Based on Chen's success, and the success of other researchers in applying a blended approach, a blended approach was employed in the context of this quantitative study as an answer to time-constraint problems faced in teaching university-level beginner string technique classes.

The use of learning theories has captured the interest of music educators around the world. A wealth of literature is available on the use of learning theories associated with the music learning classroom. Literature has shown that constructivist approaches have been widely promoted as a new paradigm in music classroom teaching practice, given that the principles of constructivism foster an atmosphere conducive to enhancing students' potential (Scott, 2010). Several recent publications have documented constructivist approaches in music education. Barron (2007) and Bond (2013), for example, demonstrated that constructivist approaches are applicable to music classrooms. In addition, Holsberg (2009) and Scruggs (2008) put effort into promoting student-centered learning practice, which is one of the core elements of constructivist approaches. Furthermore, the minds-on approach, another constructivist practice, was put forward by Berg (2008) and Scott (2010). However, most previous studies were not conducted in Malaysian university-level educational settings. On the basis of the promising findings presented in prior studies, the present study aims to provide empirical evidence for the appropriateness of utilizing a blended constructivist and objectivist approach in the Malaysian educational setting.

Barron (2007) employed jazz as a model for constructivist approaches. In his paper, based on Wiggins's (2001) approach to cognitivism in music, Baron (2007) delineated six points of teaching and learning jazz based on constructivism. In the context of this study, the researcher feels that these approaches are applicable in teaching university-level beginner string technique classes. First, Barron (2007) pointed out that learners should be given the chance to relate directly to the subject matter. In the present study, in order to create a constructivist music classroom for beginner string technique students, the main focus of the teaching and learning process should be on performing, creating, and listening. The instructor should put the least emphasis on talking about music. Instead, the instructor should walk around the classroom scaffolding and fading to facilitate students working independently. In the blended objectivist–constructivist approach, symbolic modeling was applied in the form of instructional materials presented through YouTube. This approach enabled the instructor to apply the scaffolding and fading approach effortlessly.

Second, Barron (2007) emphasized that learners should participate actively in the learning process. Instructors in beginner string technique classes could teach the lessons in small ensembles to facilitate students' engagement in music in a more interesting and meaningful way. For this purpose, a class consisting of 20 students seems to be an ideal size for beginner string technique classes.

Aside from the abovementioned approach, learners need opportunities to work individually, with other group members, and with appropriate teacher scaffolding. Besides individual practice, students in beginner string technique classes should be assigned to work in small, heterogeneous groups. Upon receiving pieces for performance assessments, assigning students to work in small groups permits them to listen and cooperate with other performers. By working together in a group, students will support each other and develop musical skills with little help from the instructor.

Finally, Barron (2007) suggested that learners should be sensitive to the learning goals and their own advancement in achieving these goals. In terms of developing instructional materials in the current study, the first stage of Dick and Carey's (Dick, Carey and Carey, 2005) design involves the identification of instructional goals. These goals were presented at the outset of the course. In this way, students will be aware of their ownership in the classroom and encouraged to comprehend what they are experiencing at that moment and what they have already achieve previously. Hence, gradually these students will develop independence as musicians, as well as music apprentices.

The fundamental principle of the Reggio Emilia Approach (REA) includes creating a constructivist classroom, documenting, and creating an environment as the second teacher and community of learners. In the current study, the researcher believes that Reggio principles can be adopted in teaching beginner string technique classes to promote innate musicality in university

students. Specifically, Reggio principles that were adopted in this study include constructivist classroom practices and documentation.

Constructivists believe that students should enter the classroom with instinctive capabilities, abilities, and prior knowledge. The REA is entrenched in social constructivism, whereby teachers function as facilitators and companions to students in the learning process. The students are facilitated in the discovery process through questioning. Bond (2013) stated that in the context of the music classroom, the practice of “following the child,” as promoted by the REA, is achievable through utilization of open-ended instructional strategies, allocating time for free musical play, and exploration. In the context of beginner string technique classes, exploration can be implemented as a teaching strategy in the process of promoting a constructivist classroom.

Reggio educators employ documentation as assessment tools for motivating children. These documents are made available to the children, parents, and community. In this study, the researcher employed this practice in beginner string technique classes as a means of assembling video and audio documentation of the student music-making process. The assembled audiovisual documentation could then be used by students to reflect on their own work, thereby enhancing their critical-thinking skills.

The constructivist classroom designed by Holsberg (2009) was classified into three basic categories; that is, dyad, small-group, and large-group activities. In all three settings, Holsberg (2009) emphasized improvisation and composition activities. In dyad activities, students are assigned to work together with a partner and evaluate each other’s solo performance. Students are required to choose their own partner, who they will then critique. Holsberg (2009) indicated that this classroom activity is a constructive pedagogical tool whereby students are able to reflect not only their own practice, but that of their peers as well. Small-group activities involve heterogeneous small group activities. In this activity, students work together in what Holsberg (2009) described as “musical conversation[s],” where students improvise as a reaction “...to each other’s musical gestures and motives” (p.134). In the current study, students were assigned to heterogeneous small-group activities. This exercise helped students to get used to group dynamics and initiating collaboration processes by means of listening to the other group members. In addition to small-group activities, the research adapted Holsberg’s (2009) large-group ensemble-setting activity to assist students to gain a deeper understanding of the difficulties that arise from the ensemble perspective. Additionally, Holsberg (2009) indicated that students should be required to write journal entries to keep a record of any accomplishments and disappointments in each of the structured activities. Journal writing was also adapted in the current study.

Scruggs (2008) also recommended encouraging musical independence through small ensembles as a constructivist teaching approach. She stated that incorporating chamber ensembles into weekly rehearsal schedules helps students to develop musical awareness and enhances their capabilities to work as a team. She also asserted that small ensembles promote musical independence, as well as preparing students for becoming musicians in the future. During the small-ensemble rehearsal, directors apply the scaffolding and fading approach, as per constructivism, where appropriate. This constructivist teaching strategy was implemented in the current study during the small heterogeneous group and large ensemble group activity. During these activities, the instructor walked around the classroom scaffolding students when needed, and gradually removed support when it was not needed.

Scott (2010) discussed the minds-on approach in detail. Even though Scott’s (2010) article discussed issues pertaining to the minds-on approach in the context of elementary school, the implications can also be tailored to the teaching and learning process in beginner string technique classes at university level. Margaret Sanders (Scott, 2010) employed exploration as a teaching strategy to help students explore meaningful elements in any given music pieces. Through exploration, students can decide on the interpretation that suits them best. Using exploration as a teaching strategy is also applicable in the context of beginner string ensembles, since these students are in the process of developing their skills in music. In Margaret Sanders’s class (Scott, 2010), students were required to reflect on their personal development and note this down in a journal. By

doing so, students were made aware of their individual progress in both the theoretical and practical sides of learning music. Sander's idea regarding journal writing was also incorporated in a beginner string technique class.

In the abovementioned work and in related references, it was observed that the constructivist approach is feasible in the music classroom using strategies such as communication, improvisation, experimentation, and exploration. Aside from these teaching strategies, scholars have suggested that the objectivist teaching strategy of modeling can be used to aid the learning process. While academics have advocated the positive outcomes of integrating these teaching strategies in the music teaching routine, additional evidence is necessary to substantiate their relative importance in university-level beginner string technique classes.

Instructional design practice has captured the attention of many scholars and educators over the past 20 years. This section of the literature review provides a glimpse into instructional development within higher education, as well as music education specifically. A study conducted by Postareff, Lindblom-Ylänne and Nevgi (2007) supported the idea that instructional development has a positive effect on students in higher education. However, Gibbs and Coffey (2000) emphasized that there is still a lack of evidence that instructional development has a positive effect. Aside from that, past syntheses of instructional development research have revealed that more research is needed in order to substantiate the effect of instructional development on students' learning outcomes and outcomes for institutions by means of employing quantitative research on specific target groups. In the area of music education, earlier research has focused on developing new models of effective music programs. In spite of this, only a handful has focused on establishing the effects of designed models on students' learning outcomes. The above literature review also indicates that there is still a gap in instructional design application in music education, particularly in relation to beginner string technique classes. It is surprising that even though constructivism is starting to be applied to instructional design models and processes, research and practice that incorporate both instructional design and learning theory epistemology is still scarce. In response to this gap, the researcher chose to develop instructional materials utilizing Dick and Carey's (Dick, Carey and Carey, 2005) instructional system design by integrating an objectivist and constructivist approach, since such a blended approach has been proven to yield positive results on student learning, as indicated by Bellefeuille (2006), Cennamo (1996), Chen (2007) and Tuckman (2002). Additionally, the research sought to establish the effects of the model on students' learning outcomes. Based on the reviews above, the researcher chose to apply systematic design of instruction applied by Dick and Carey (Dick, Carey, and Carey, 2005), since this model is not only efficient but also simple in nature, which is important for designing instructional materials for beginner string technique classes. Although the design is simpler compared to Morrison, Ross and Kemp's (Morrison, Ross, Kemp and Kalman, 2010) model and Smith and Ragan's (Smith and Ragan, 2005) model, it incorporates all the key components of the instructional design process, which includes analysis, design, development, implementation, and evaluation. In addition, Dick and Carey's (Dick, Carey and Carey, 2005) model was based on three major learning theories, which provides the theoretical perspective for the study.

In the process of designing practical instructional materials for university-level beginner string technique classes, the literature review also examined available studies regarding components of the instructional design system which This section embraces important facets related to teaching university-level beginner string technique classes, which includes the overall structure of instrumental lessons, student learning style, teaching style, and printed method books for teaching strings. Each of these areas is critically analyzed to enhance understanding of the principles underlying the teaching of beginner string technique classes.

In the present study, the intention was to design practical lesson content for beginner string technique classes, incorporating areas of lesson content including introduction to string instruments, general posture and position when playing the instrument, holding the bow, left-hand position, tone production, instrument tuning, beginner bowing techniques, note reading, scales and arpeggios, and practicing ensemble pieces at the beginner level.

This quasi-experimental study compares the impact of blended-approach teaching materials and conventional teaching materials. The control group beginner string technique class was taught using *All for Strings: Comprehensive String Method Book* as the main textbook. This method book was chosen because for the past 10 years the researcher has made use of this particular method book as the main textbook for teaching university-level beginners. Hence, it is an appropriate choice to compare the effectiveness of the newly designed instructional materials for teaching university-level beginner string technique classes.

A combination of objectivist and constructivist instructional design strategies were adopted in designing the instructional materials for teaching university-level beginner string technique classes. Based on Dick and Carey's (Dick, Carey, and Carey, 2005) instructional system design, the fourth stage involved writing performance objectives. This objectivist instructional strategy necessitated the researcher to set well-defined goals and objectives. In what follows, the instructional strategies used in achieving the stated goals and objectives are identified. By examining the literature related to constructivist and objectivist classroom practices, the researcher was able to implement constructivist teaching strategies of communication, exploration, and experimentation in the present study. In addition, the objectivist teaching strategy of modeling was integrated into the blended approach. This was employed to assist students in achieving the assigned learning goals and objectives. In due course, the impact of the blended approach instructional materials on students' achievement and satisfaction were determined through researcher-designed instruments. The objectivist assessment approach used formative evaluation via an achievement test and performance assessments. In addition, a satisfaction survey was conducted as a summative evaluation. Both evaluation procedures were conducted at the end of the instruction period.

A wealth of literature is available in the area of assessment and evaluation. By examining the literature related to this matter, educators may gain deeper understanding of a number of aspects associated with assessment, including purpose of assessment, assessment tools, principles of assessments, developing tests for evaluating instruction, and measuring musical performances. In the present study, the researcher followed Bloom's taxonomy (Bloom, 1956) with the aim of creating a high-quality achievement test. Four major categories of objectives were integrated into the test; that is, knowledge, comprehension, application, and analysis. With reference to the literature concerning item writing, the test was constructed using multiple-choice and short-answer items. Multiple-choice question items are useful in assessing students' knowledge and understanding, and their capabilities in terms of applying the acquired knowledge. On the other hand, short-answer items were utilized because these kinds of questions facilitate students in accessing a wider array of knowledge (Scouller, 1998). Bacon (2003) further insinuated that short-answer items are on a par with multiple-choice questions in terms of reliability and validity.

The literature related to measuring musical performance provided valuable information regarding rubrics and rating scales for evaluation of musical performance in this particular study. Due to the advantages pointed out by scholars regarding rubrics, (Ciorba and Smith, 2009; Latimer, Bergee and Cohen, 2010), the present study employed rubrics for adjudication purposes. This study used a rating scale to assess tone production, intonation, posture, left-hand technique, and bowing technique for individual performance assessment, whereas in the ensemble assessment the rating scale included music reading, tempo, rhythm, dynamic level, and interpretation.

Instructional Assessment Resources (IAR, 2012) recommended that test developers should conduct item analysis to verify the feasibility of each item in a particular test. In the present study, data gathered from the pilot study were used in item analysis procedure to ensure that the quality of the designed test was satisfactory.

The conceptual framework of this study elucidates the composite teaching and learning instructional materials for university-level beginner string technique classes, and incorporates the instructional system design posited by Dick and Carey (Dick, Carey, and Carey, 2005), along with integration of a blended objectivist–constructionist epistemological approach. The framework is illustrated in Figure 2. Maxwell (2005) stated that a conceptual framework is “primarily a model of what is out there that you plan to study, and of what is going on with these things and why” (p.33).

Following the review of the literature, the researcher determined that a blended objectivist–constructionist approach to learning is the most suitable approach for designing instructional materials for teaching university-level beginner string technique classes. The main purpose of the study is to design instructional materials that incorporate the four constructivist teaching strategies of communication, exploration, and experimentation, well as objectivist teaching strategy of modeling which were designed for a student-centered learning environment. These teaching strategies were employed to assist students in achieving the assigned learning goals and objectives. Ultimately, the impact of the blended instructional materials was determined through researcher-designed instruments including a student achievement test, performance assessments, and student satisfaction survey. Moreover, the study aimed to provide an innovative and contemporary approach to teaching university-level beginner string technique classes.

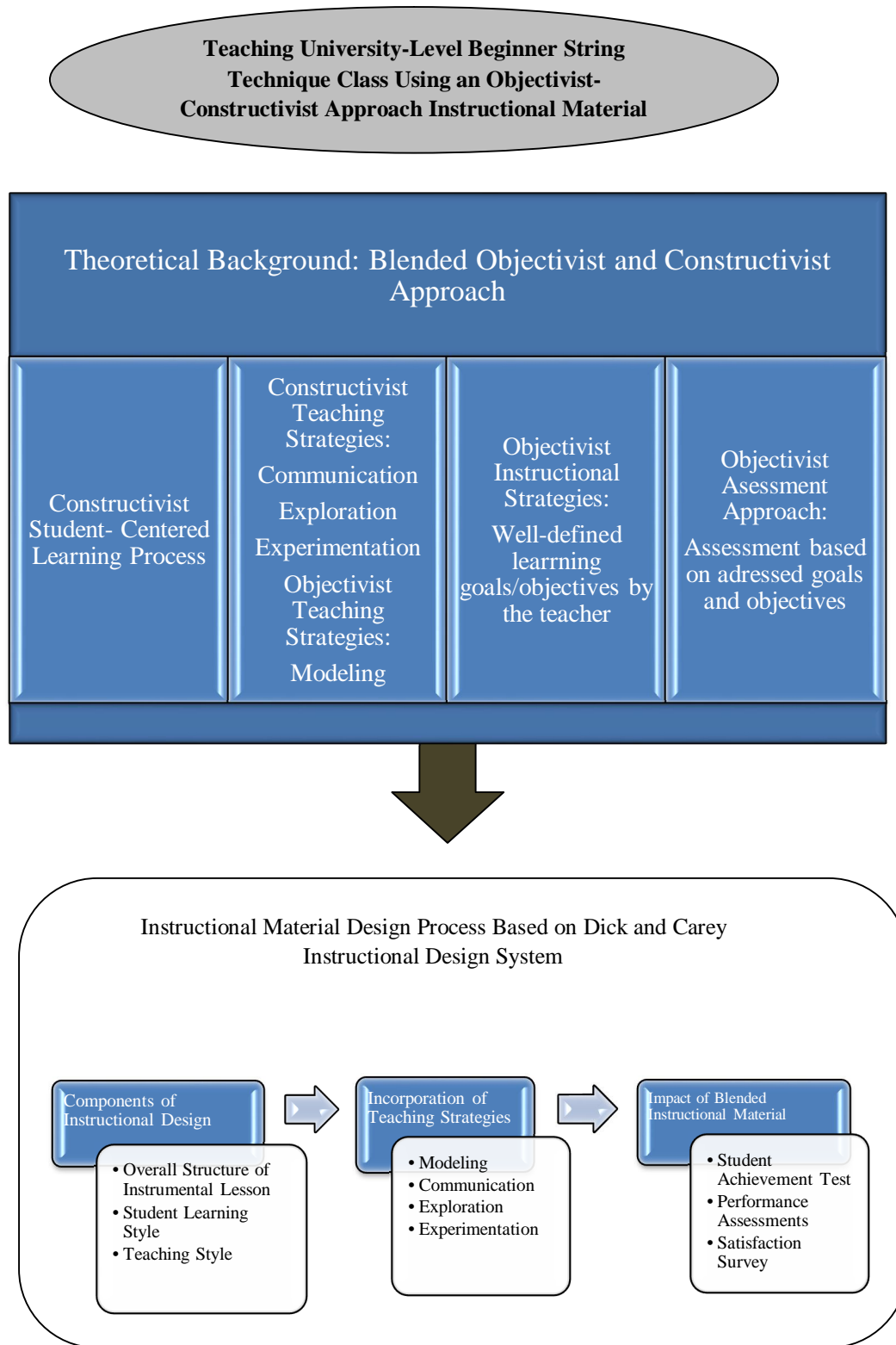


Figure 2: Conceptual Framework

CONCLUSION

These blended-approach instructional materials for teaching beginner string technique classes are the first of their kind. Music educators might find the paper useful, as it outlines an array of information regarding subject matters from the theoretical perspective of learning theory, instructional designs, components of instructional design, teaching strategies, and assessment and evaluation. Further, it contributes to current literature on the subject of instructional design practice in music education; this should stimulate further research.

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