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Article

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FINANCIAL ECONOMICS | LETTER

Student-managed investment course: A learner-centric approach to investment management

Subramania Raju Rajasulochana^{1*}, Savitha Heggede² and Aditya Mohan Jadhav²

Abstract: While there has been a rapid growth of business and management schools in India since 1990, the curricula, teaching methods and the mode of delivery largely remain an instructor-led approach overlooking the needs of learners and potential employers. This paper presents a learner-centric investment management course known as Student-Managed Investment Course (hereafter, SMIC). It elucidates the structure, design and implementation of SMIC based on the principles of experiential learning. SMIC has been organised to create a conducive environment for the emergence of varied experiences and encourage reflections among students on the theory and practice of investment finance. The unique feature of the course is real-time exposure to investment activity in the Bombay Stock exchange/National Stock exchange, which helps students observe and grasp the nuances of capital market functioning and to acquire requisite skills for financial decision-making. This document on SMIC has a value in being a useful guide for other business schools in India for adopting a learner-centric approach to investment management.

Subjects: Economics; Business, Management and Accounting; Adult Education and Lifelong Learning

Keywords: academic innovation; experiential learning; finance curriculum; India; management education; real time investment decisions

Subjects: G11; G32; M21

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PUBLIC INTEREST STATEMENT

Management education in India has witnessed tremendous growth in recent decades, yet the curricula and the methods of instruction followed in educating business graduates have not changed much. This article focusses on an industry-relevant finance and investment curriculum that fills the gap between theory and practice. It presents an academic innovation related to Student-Managed Investment Course (SMIC) at T A Pai Management Institute, where post-graduate management students invest real money and undertake investment decisions in the Bombay Stock Exchange (BSE)/National Stock Exchange (NSE) Listed Companies. The course aims to develop a practitioner's perspective on the philosophies, processes and practices of portfolio management among finance students.

1. Introduction

Rapid trend of globalisation through trade and investment, alongside advancement in communication and information technology since the 1990s, has led to sprawling business and management schools in India. The annual average addition of management institutes in pre-liberalised period (1950 to 1980) was just four institutes per year, which increased to 64 institutes between 1995 and 2001, and then drastically shot up to 283 institutes per year between 2000 and 2011 (Mahajan, Agrawal, Sharma, & Nangia, 2014). According to the official website of All India Council for Technical Education (AICTE), the regulator of Management education in India, there are 3120 approved institutes producing 3,74,564 graduates in the year 2017–18. Besides, there are around 2,380 unrecognised business schools and management institutes in India. The proliferation of institutes in the country, however, has evoked a serious debate on the quality of business and management education (Jha & Kumar, 2012; Kumar & Dash, 2011; Mahajan et al., 2014; Menon, 2014; Ojha, 2005; Saha Gautam, 2011-2012). Employers perceive skill gaps among trained management students, in terms of content knowledge, application, planning, organising, problem-solving, critical thinking and self-management; and soft skills such as communication, teamwork, conflict resolution and interpersonal relations (Chadha & Mishra, 2014; Chavan & Surve, 2014). A study conducted by ASSOCHAM¹ Education Committee (AEC) in 2016 noted that only 7% of the management graduates from India are employable (Business Line, April 2016).

Studies from India have acknowledged quality concerns in management education and the need to focus on *the topics to be taught (what has to be taught) and method of delivery (how it has to be taught) relevant to the Indian context* (Bowondor & Rao, 2004). The training provided to business and management graduates in India has been a subject of scrutiny on two accounts: one, *curriculum being out of sync with the organisational reality and business context* and two, *misalignment between “skills needed in business” and “what is imbibed in business schools”* (Panda, 2015). Moreover, the increasing trend among business schools to adopt an intensive and accelerated mode with time compressed and shortened delivery of courses has impacted learning among students negatively (Mishra & Nargundkar, 2015). A recent study highlights that most postgraduate business students in India prefer *andragogy or the learner-centred teaching and curricula*, though most Indian educational institutes still follow the *conventional teacher-centred philosophy of teaching* and use conventional curricula and instructional methods (Muduli, Kaura, & Quazi, 2018).

With increasing pressures from stakeholders’ groups (like accreditation agencies, ranking entities and regulatory bodies) and growing competition among business schools in India, most institutions are open for student-centric innovations to yield the optimum learning outcome for business students (Aithal, 2016). Efforts are being made by Indian faculty members in the development of experiential learning pedagogies and instruction mode for enriching classroom learning—such as case method, market simulations, games, audio-video aids, story-telling, role plays, industrial visits, classroom experiments, etc. However, such efforts are not documented and hence are unnoticed. There are limited studies on the design, implementation and effectiveness of such teaching-learning initiatives from India. For instance, a study examines the effectiveness of management simulation across diverse industrial platforms, management functions, trainee audiences, corporate goals, or for specific situations (Dumblekar, 2004). Another study discusses case study method as a pedagogy tool over other teaching methods in the Indian context and points out while case method helps to overcome the limitations of the highly structured lecture method, its effectiveness is highly context-specific, dependent on *the instructor’s sensitivity towards the choice and age of the case* in relation to the *participants’ (students’) profiles*, their background, and the *lessons (conceptualizations)* sought to be realized (Jain, 2005). Another paper examines the usage of popular movies for developing cross-cultural management competencies and skills for communication, global leadership and diversity management (Pandey, 2012).

Innovations in management education in India have received much less research attention as compared to the western world. The existing Indian studies in the domain (Dumblekar, 2004; Jain, 2005; Pandey, 2012) are initiatives implemented at the level of individual faculty members and do

not inform how academic innovations emerge at the organisational level and what mechanisms ensure the effectiveness and sustainability of such innovations. Further, the abovementioned studies have overlooked theoretical principles that explain student-centric learning in the context of management education. This paper aims to document an academic innovation related to the finance curriculum—a learner-centric approach to investment management, as an organisational initiative in a reputed business school from South India. Specifically, the objective of the paper is to elucidate the design, structure and implementation of SMIC based on the principles of experiential learning and discuss the effectiveness of the course in terms of real-time investment portfolio performance and learning outcomes among students.

Our contributions to the literature in the domain of management education in India are as follows. First, this paper discusses at length the design, structure and implementation of an academic innovation at the organisational level. This is first of a kind, explicit documentation from India that informs about the essential processes and requisites like funding, investment, faculty support, training and administration that sustain such academic endeavours. Second, we have positioned the SMIC experiences within theoretical principles of experiential learning with the application of a relevant framework in management education put forth by Fourcade and Go (2012). Third, we discuss the students' performance on investment portfolio and assessment of learning from SMIC against the specified course learning outcomes. Given the increasing paradigm shift towards experiential learning methodologies within business and management education in India, this paper represents an important step forward in assessing the learning outcomes derived from real-time investment activity.

The remainder of this paper is structured as follows. Section 2 provides a brief review of the relevant experiential learning and student-managed investment fund literature. Section 3 describes in detail the key features of SMIC. Section 4 elucidates the principles and elements of experiential learning in structure, design and implementation of SMIC. Section 5 discusses the outcomes related to SMIC, both in terms of students' performance on investment portfolio and the assessment of learning from SMIC against the specified course learning outcomes, followed by concluding remarks.

2. Review of studies

2.1. *Experiential learning for management education*

Experiential learning is defined as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (Kolb, 1984, p. 41). Experiential learning according to Kolb (1984) involves two dialectically related modes of grasping experience—Concrete Experience (CE) and Abstract Conceptualization (AC)—and two dialectically related modes of transforming experience—Reflective Observation (RO) and Active Experimentation (AE). Experiential learning occurs in an idealised learning cycle or spiral where the learner “touches all the bases”—experiencing, reflecting, thinking, and acting—in a recursive process that is responsive to the learning situation and what is being learned. Immediate or concrete experiences are the basis for observations and reflections. Experiential education first immerses learners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking (Lewis & Williams, 1994, p. 5).

Pedagogies within business and management schools are increasingly shifting toward using student-centric learning approaches that link theory to practice and facilitates a stronger academic industry connect and practices (Kayes, 2002; Kolb & Kolb, 2009; Lee, McGuiggan, & Holland, 2010; Vince & Reynolds, 2007). An array of experiential learner-centric methods such as case discussions; role-plays; system demos and screencast tutorials; simulations, games and interactive assessments; workshops and walkthrough assignments; practicums; capstone projects and internships have emerged in the contemporary management education for developing critical skills and competencies in different functional domains of management (Vince & Reynolds, 2007). Such learning techniques

are found to be effective for management training and education in diverse fields such as talent management, leadership capabilities, competence development, change management, community involvement, volunteering, cross-cultural training and entrepreneurship (Bevan and Kipka, 2012). One study proposed a pedagogical framework based upon principles and postulates of experiential learning theory and integration of several instructional resources and techniques that can facilitate student learning of enterprise resource planning systems courses (Ruhi, 2016) while another study illustrates the use of course-specific learner-centric game—an accountancy-oriented board game—designed to learn about cost management (Eckhaus, Klein, & Kantor, 2017).

2.2. Student-managed investment fund as an experiential learning program

A student-managed investment fund (hereafter, SMIF) is defined as a fund “where university students have full discretion over the management of a real dollar portfolio” (Lawrence, 1994). SMIF resembles like a real investment firm which manages a mandate from its university’s endowment fund or pooled fund among students, where students are entrusted with the responsibility and granted the authority to invest real money in the stock and bond markets. The management of such funds is usually monitored by faculty members; some funds also involve external professionals who serve in an advisory capacity to enrich the experience for students and showcase their programs. Researchers show that SMIF provides a realistic learning experience to students and increases their employability (Dunne, Fitzgerald, Manning, & O’Reilly, 2018; Kahl, 1997). SMIF provides a holistic learning experience as it requires students to carry out economic and company research, financial data analysis and investment decisions (Neely & Cooley, 2004). Students involved in handling the investment portfolio experience a sense of pride as they use real money, and perception among business community improves as they see these funds provide a real experience to university students. SMIF, thus, provides psychological benefits to students and the business community perceive students to be highly trained for investment management (Hirt, 1977). Bowers and Lavin (2012) demonstrate that SMIF helps students to develop stock evaluation model and learn the investment analysis process and accurately identify good and bad investment opportunities. According to a survey conducted in 2007, there are 314 universities across the globe offering SMIF for learning portfolio management that allowed students to directly invest real money and manage more than \$407 million in assets (Lawrence, 2008). The idea of SMIF is catching up across Indian business schools too; some of them are NIVESH (Lal Bahadur Shastri Institute of Management, Delhi), Vinidhan (Goa Institute of Management, Goa) and Samnidhy (T A Pai Management Institute).

3. About SMIC

The focus of the paper is on SMIC offered in a reputed accredited business school located in Karnataka, T A Pai Management Institute (hereafter, TAPMI). SMIC is a four-credit² specialised compulsory course that runs over consecutive three semesters, exclusively offered under Post-Graduate Diploma in Management—Banking and Financial Services (PGDM- BKFS). This program offers two specialist career choices—Financial Market Professional (across various asset classes) or Specialist Banking Professional in its second year. SMIC is a mandatory investment course that initiates second-year students of PGDM-BKFS to make real-time investments in the Bombay Stock Exchange (BSE)/National Stock Exchange (NSE) and generate returns for their fund within the given investment horizon. It is aimed at enhancing competencies in the valuation of securities and portfolio management.

SMIC is similar to Samnidhy³ (TAPMI’s SMIF) as both are aimed to provide real-time money management and financial decision-making experience to students. The difference between the two is as follows: Samnidhy is a volunteer student’s fund in TAPMI to pool their money and invest across multiple asset classes, i.e., the SMIF corpus is collected from the students, by the students and managed by them. On the other hand, SMIC is a mandatory four-credit course for students enrolled in PGDM- BKFS program, who are given an endowment fund (INR 25,000 per student) provided by the institute to be invested only in equities. SMIC was introduced in 2015 as a hands-on investment course, motivated by long-drawn discussions and deliberations on how finance ought to be taught within TAPMI. There was a strong need felt among academics

to restructure finance curriculum to bridge the gap between finance theory and practice. Three specific needs led to the development of SMIC, namely, i) the need to enhance student learning experience with live market information and facilitate skill development in stock selection process, construction of optimal portfolios and investment decision-making; ii) the need to stimulate “integrative thinking” across disciplines of accounting, financial statement analysis, valuation etc, thus enabling in-depth learning of Finance; and iii) the need to make learning the course on investment and portfolio management more fun and align the course offered at TAPMI to the best practices for financial training in leading international business schools like MIT Sloan School of Management (USA), Hong Kong UST Business School (Hong Kong), Carnegie Mellon University (USA) and Monash University (Australia).

In conjunction with SMIC, the idea of constructing a finance lab—a central feature for running the fund—within TAPMI was mooted in 2013. It was felt having a finance lab within the institute would be beneficial for students in terms of the improved learning experience in line with global practices, develop familiarity with typical trading room in the real world and thereby improve their employability skills. Finance lab is also essential to exhibit and explain to the industry experts and external finance professionals about how graduates in the institute are trained using sophisticated financial economic modelling and information analysis software embedded within the trading terminals. A formal proposal along with the budget document to build TAPMI Finance Lab and subscription of licensed specialist software platform like Bloomberg Terminals was prepared. Subsequently, the Board members of TAPMI Trust approved the requisite capital investment. For more details on the evolution of the course and resource requirements related to SMIC, see [Box 1](#).

SMIC has three course learning objectives (hereafter, CLO) corresponding to the six program learning goals (PLG) of PGDM-BKFS course. TAPMI has defined these PLGs in terms of *traits* to be demonstrated by students who complete the course successfully. It is to be noted that the three CLOs associated with SMIC have been to linked more than one PLG. However, for assessment purpose, one CLO is uniquely linked to only one PLG (For details please check [Appendix 1](#) on the

Box 1. Key facts and information related to SMIC

Timeline

- July 2014—Launch of BKFS program and SMIC, as an integrative course on investment, was incorporated in 2nd year of the program.
- August 2014—TAPMI Finance Lab with sixteen Bloomberg Terminal was inaugurated
- September 2014 -Two students nominated for Bloomberg Champions Programme
- October–December 2014—Selected Bloomberg Champions imparted training to students and support to faculty to integrate their courses with Bloomberg terminals.
- January 2015 onwards—Varied modes of student engagement outside the regular classroom like Friday Night series, Coffee, Cookies and Conversation, an in-house quarterly TAPMI Journal of Economics and Finance, Newsletters, etc. were introduced and is being continued till date.
- June 2015- First batch of SMIC (BKFS-2nd Year) commenced operation.
- March 2016—Presentation and evaluation of SMIC performance reports by specially invited professional fund managers in a formal event.
- September 2017—Seven Reuters terminals added to the TAPMI finance lab.

Resource Requirements

- A corpus of INR 15 Lakhs (approximately US\$ 21,140 @ 1 US\$ = 70.95 as on 31 August 2018).
- Four Finance Academics (SMIC in-charge Core faculty along with a cohort of three faculty members).
- Two staffs to manage the finance lab (one IT personnel and one support staff).
- TAPMI Finance Lab houses sixteen Bloomberg Terminals and seven Reuters Terminals.
- Official D-mat Account per team for trading

Source: Compiled by Authors through interview of SMIC core faculty

Table 1. Alignment of CLO with Bloom’s Taxonomy

CLO	Bloom’s Taxonomy of Educational Objectives
<p>CLO 1 Compare performance of various Investment opportunities and come up with a dynamic Asset allocation strategy for their fund.</p>	<p>Analysis Separation of a complex idea into its constituent parts and an understanding of organization and relationship between the parts. Includes realizing the distinction between hypothesis and facts as well as between relevant and extraneous variable. Guided Response Knows steps required to complete the task or objective.</p>
<p>CLO 2 Construct optimal portfolios, generate research reports, compute various input parameters and determine entry, rebalancing and exit strategies.</p>	<p>Evaluation To make a judgement of ideas or methods using external evidence or self-selected criteria substantiated by observations or informed rationalizations. Adaptation Performs task or objective in a confident, proficient and habitual manner and modify actions to account for new or problematic situations.</p>
<p>CLO 3 Choose and justify an appropriate course of action for managing their portfolio in alignment with their stated Investment philosophy and generate alpha and returns for their portfolio within the given investment horizon.</p>	<p>Valuing Internalizes an appreciation for(values) the objectives, phenomena or activity. Organization Begins to compare different values and resolves conflict between them to form an internally consistent system of values.</p>

CLO-PLG link file.) These CLOs are aligned to corresponding Knowledge-based, skills-based and affective goals of Bloom’s taxonomy (Sosniak, 1994) shown in Table 1.

4. Key features of SMIC

4.1. Investment teams

Typically, there are 35 to 40 students per batch of PGDM-BKFS. These students are divided into teams. Each team, depending on the batch size, consists of four to six students. Each team is led by one team leader who plays the role of the portfolio manager and other members take the role of finance analysts and sector analysts.

4.2. Practitioner sessions

The course is entirely run through practitioner sessions, where a guest speaker from the industry (stock analyst, portfolio managers, regulators, traders) is generally invited every week to give a talk followed by a question and answer discussion. Post lecture, students make presentations and discuss with the invited guest speaker about their securities research and recommendations of buy and sell.

4.3. Managing the portfolio

The Institute provides a corpus of about INR 15 Lakhs (approximately US\$ 21,140⁴) to the cohort of PGDM-BKFS students. Each student is given a corpus of INR 25,000 (approximately US\$ 352). The team has a collective corpus of 125,000 rupees (approximately US\$ 1761). The team is responsible for investing this money in an approved class of securities and manage the same through trimesters IV to VI. The investment time horizon for holdings is typically 9 months. The portfolio is expected to be liquidated by the first week of March in any given year. Entire proceeds after paying necessary taxes will be reverted to TAPMI since the institute has funded the initial corpus.

4.4. Investment process

Each team presents its own investment philosophy along with the strategic and tactical asset allocation plan. Depending upon the style and allocation, an appropriate benchmark is identified.

Given that there is no liquidity need, the portfolio can bear above average risk. The asset allocation to domestic stocks should be a minimum of 85% and the balance in cash/liquid mutual funds. The volatility for such an asset allocation is expected to be moderately above the long-run historical averages. The students are not allowed to invest in debt securities, government bonds and derivative instruments.

4.5. Stock selection

The stock selection process is a multi-step process that enables to identify shares that (a) satisfy basic filters designed to limit the universe of investments under consideration to profitable firms which are likely to have attractive valuations; (b) are undervalued by detailed fundamental and relative valuation methodologies and; (c) are consistent with the risk profile adopted by the portfolios' quantitative investment management strategy. The conditions are as follows:

- (i) The firm must be listed in NSE or BSE with a minimum Market Capitalisation of INR 300 crore (approximately US\$ 0.43 million).
- (ii) The firm must be within NSE 500/BSE 500 stocks.
- (iii) The firm must be profitable as determined by the net income for the last 3 years.
- (iv) The firm must have a positive free cash flow for the previous year.

In case of dispute between team members, the portfolio manager of each team is the decision-making authority for the stock selection.

4.6. Portfolio performance evaluation process

To facilitate regular oversight and evaluation of the investment process, SMIC teams present their decisions to the faculty cohort on a weekly basis. Each team maintains a detailed investment diary wherein their rationale of decisions taken as well as their experiences are captured. Each team presents its decisions relating to (a) which stocks to be bought and sold and (b) the purchase and selling prices. When recommending a stock to be bought, student portfolio managers are expected to also indicate the target selling price at which the stock will be sold in future. The portfolio managers should ensure that the revised portfolio composition satisfies the exposure limit of the SMIC.

4.7. Grading

The overall grading of SMIC involves three components:

- a. Weekly Research Reports/Presentations/Participation in Practitioner sessions (40% weightage)
- b. Comprehensive investment diary with entries on stocks bought, sold, prices at which bought, sold and detailed reasons about the same must be provided (30% weightage); and
- c. Portfolio Performance against the chosen benchmark is given 30% weightage.

The first two components are evaluated by the core faculty and a cohort of three faculty members. The last evaluation component—final portfolio performance (considering the investment philosophy and rationale) by a group of professional fund managers and industry experts. These senior professional experts are from reputed firms like such as ING Bank, Citi Research, DSP Blackrock, Ratnakar Bank Ltd., Avendus Private Equity Syndication, Kotak Mahindra, etc.

In summary, SMIC is a team-based investment activity for about 9 months. Each team arrives at its investment philosophy, asset allocation strategy, stock selection criteria and its market entry/exit timing tactics. Each team is entrusted with the responsibility and authorised to make real investments and generate returns. Each team is monitored and evaluated for its performance by a cohort of faculty, senior fund managers and industry experts.

5. SMIC as an experiential learning process

The paper adopts a new paradigm for experiential learning, put forth by Fourcade and Go (2012) to examine the features of SMIC. This paradigm extends the Kolb's framework (1984) of the four-stage learning cycle for experiential learning and highlights that not all experience will produce learning. There are four key conditions that must be present to allow genuine "learning by experience" to take place, namely—i) The conditions for the experience to emerge from participants; ii) Multiplicity of experiences, the proliferation principle; iii) Dual Epistemological Authenticity principle and iv) Complexity principle. We discuss these conditions in the structure, design and implementation of SMIC, as follows:

5.1. The conditions for the experience to emerge from participants

This principle implies creating conditions that would facilitate experiential learning to occur. It means "creation of learning spaces" in the institutional ecosystem that promotes growth-producing experiences for learners (Kolb & Kolb, 2005). These learning spaces include the learner's physical and social environment and quality of relationships. In the context of SMIC, these educational learning spaces were created within TAPMI through the creation of finance lab and the supporting physical infrastructure and supporting staff development, curriculum design, faculty development, and student engagement activities.

An exclusive physical space was constructed in the institute for TAPMI Finance Lab for students: a) to get acquainted to high power desktop computers, multiple screens, and high technology telecommunications systems; b) to access live market data and news across the globe; and c) to stimulate learning to read and use sophisticated financial economic modelling and information analysis software. Further, inspiring wall quotes by prominent investors and insightful statements by leading economists generate motivation novice learners in finance. Adjoining discussion rooms and cubicles make hospitable space for an open and unrestricted conversational learning. These physical spaces are regularly maintained and supported by dedicated full-time Information Technology staff.

The curriculum for SMIC has been designed to provide both "planned" and "unplanned" experiences. The scope and the range of planned activities include practitioners' sessions, guest lectures, training on Bloomberg Terminals, and presentation to industry professionals. The "unplanned experiences" are related, not from the training itself, but from the uncertainty associated with consequences of stock selection and trading decisions.

The faculty members from the Finance Area were encouraged to integrate their respective courses to live Bloomberg database. In this regard, several faculty members were sent for Faculty Development Programme at Bloomberg Office at Mumbai, to gain expertise in utilising Bloomberg Terminals.

The students enrolled in SMIC were encouraged to actively participate in other informal forums and events in the institute such as:

- "Friday Night Series"—an informal discussion among students on contemporary finance-related topics;
- "Finomenal"—the annual finance conclave that brings together Economists, CXO's, Bankers, Regulators and Fund Managers to discuss recent trends, emerging issues, challenges and opportunities in the industry and the way ahead.
- "Coffee, Cookies and Conversation"—an experience-sharing session with a one-on-one interview of senior industry experts, to discuss and seek professional guidance from them.
- TAPMI Journal of Economics and Finance (TJEF), an in-house quarterly journal that provides opportunities to students to write papers related to contemporary issues in Economics and Finance and be part of the editorial team.
- Weekly Newsletter on Industry and Sectoral trends

Such student engagement activities outside the classroom are aimed at creating a platform for finance students to demonstrate their knowledge, network with senior industry professionals and creating social spaces for conversation among students. *Good conversations are likely to occur in spaces that integrate thinking and feeling, talking and listening, leadership and solidarity, recognition of individuality and relatedness, and discursive and recursive processes* (Kolb & Kolb, 2005).

5.2. Multiplicity of experiences, the proliferation principle

This principle states that the impact of an experience is brief and hence multiplicity of experiences is necessary to imbibe the intended learnings. SMIC is intentionally organised to encourage the proliferation of experiences related to investment theory and practice. The longevity of SMIC for about 9 months ensures that the multiple experiences via initiatives stated below reinforce practical investment decision-making skills:

- Training for using Bloomberg Terminals—Familiarisation with Bloomberg interface, data, tools and applications.
- Traditional lecture modes on topics like investment philosophy, different kinds of PE/PIPE funds—their structuring, strategies (sectoral/thematic/quant-based), managing liquidity, risk management practices and performance evaluation
- Sectoral analysis and report writing skills
- Behavioural Finance
- Guest lectures by industry experts and professionals
- Weekly presentations by team

Apart from the training sessions, a multiplicity of experiences (as mentioned in section 4.2) has been woven in around SMIC at TAPMI such as “Friday Night Series, TJEF, contributing to weekly newsletter, participation in interactive platforms like annual finance conclave, “Manthan”, an annual budget conclave, etc. These diverse opportunities for engagements and interactions proliferate experiences in Finance and ensure that there is continuity of immediate experiences among SMIC students. Such exposures help students to experience multiple representations related to the broad area of finance and help to gain expertise and confidence in finance domain.

5.3. Dual epistemological authenticity principle

This principle implies two things—one, students are taking part authentically and not simply participating to please professors; and two, training experience is authentic to the management activity and the group experience is transposed to the context of an organisation. The first aspect is dealt through formative assessment components of a weekly presentation that carries 40% weightage in overall grade in SMIC, which help the faculty to identify the areas of strengths and weakness of each student and recognise where they need to put efforts to improve. Another way to ensure authentic participation by students is the continuous monitoring and oversight by the faculty cohort of investment strategies—security selection process, portfolios construction and risk management—adopted by students in generating alpha also forms part of summative assessment and carries 30% weightage in overall grade in SMIC. The second aspect is dealt by the involvement of industry experts and professionals and alumni as mentors and through experience sharing and assessment of presentations and reports in a formal event. Roles assigned to students are akin to real life, positions such as Equity Analysts and Portfolio Managers. Formal presentations in an open and formal event in front of specially invited professional and experienced fund managers bring in more seriousness and facilitate critical thinking and formal communication skills among students. Such experiences deepen understanding of vagaries of capital market and nuances of investment decisions in line with industry practices among students. Some observations shared by senior industry experts in feedback note (names have been concealed for anonymity) are presented in [Box 2](#).

Box 2. Observations from industry experts

- "Knowledge about the nuances of investing, building an actual portfolio and striving for risk adjusted returns."*
~ ABC, Chief Rating Officer, ICRA Limited
- "Innovative and unique approach (to investment training) ... conceptions converge with the practical nuances of the investing world."*
~ XYZ, Vice President- Finance, Avendus PE Funds Pvt. Ltd.
- "Impressive format of the module; instils seriousness combining the academic learning into practical application ... much beyond a paper portfolio approach."*
~MNO, Vice President -Equity Sales Dolat Capital
- "Much shorter learning curve post their(students) placements; providing unique learning experience. (SMIC) makes students market ready"*
~ Independent Fund Analyst
- "A great initiative; make students understand their mistakes and learn from it."*
~ DEF, AVP-Training, Citi Research
- "First in India and unique ... all teams worked very well and very hard; TAPMI should popularize it more and broadcast the same."*
~ PQR, CFA Senior Vice President DSP BlackRock

Source: Compiled by Authors from the Feedback Note from Industry Experts

5.4. Complexity principle

This principle relates to the links between experiences and from the experience to its intelligibility. As pointed out by Fourcade and Go (2012), multiple experiences may well result in indifference, without any reflective thoughts. Weekly sessions by industry practitioners and feedback on the process by faculty cohort on a weekly basis allow the SMIC team to reflect on their decision and imbibe the learning. The other important tool for evaluating the success of experiential learning through SMIC is the comprehensive investment diary maintained by each team, which records the weekly minutes of the meeting, details about the stocks bought and sold. The investment diary also records the prices at which stocks are bought and sold and detailed reasons for the buy/sell decisions. Selected testimonies recorded in investment diaries that display such reflections are presented verbatim in Box 3.

6. Assessment of learning through SMIC

Being an AACSB accredited business school, TAPMI has developed its own Assurance of Learning (AOL) processes "for determining and revising degree program learning goals; designing, delivering, and improving degree program curricula to achieve learning goals; and demonstrating the degree program learning goals have been met." (AACSB Standard 8 CURRICULA MANAGEMENT AND

Box 3. Testimonials from SMIC students

- "The frequent interactions with industry stalwarts and opportunity to present our insights, thoughts and philosophies in front of them have provided us with ample scope to learn and gather rich experience from the industry experts. These learnings have strong value addition and will help us to have a wonderful career in the world of finance."*
~Team Greenback Boogie (class of 2015)
- "SMIC has provided us a greater insight than a textbook based course. We have learnt to trust our analysis and have courage in times of market falls. We have been patient with our buy and sell decisions. We have realized our mistakes of panic selling and early selling. We are taking home an understanding of a lifetime. Our good and bad decisions have taught us to look out for change. Change is never a bad thing; we only have to make the right decisions to make it desirable to us."*
~Team Nivesh (class of 2016)
- "Patience and discipline are key to success: There were times when our portfolio wasn't reflecting the prices and movement that we had expected. This was very disappointing for us as we were beginners. However, we realised even though it took time the portfolio did go towards the direction we were aiming at and we just had to be patient. We learnt that the art of investing is not something you can learn from books and only when one faces the real markets will you learn how to make good picks and bear returns."*
~Team Vinidhaan (class of 2017)
- "Greed and fear are two things which every investor has to overcome and due diligence is the most important aspect while entering any stock. We learnt that excessive churning of the portfolios only leads to increase in costs thereby reducing the profits."*
~Team Aeon capital (class of 2018)

Source: Compiled by Authors from Investment Diaries

ASSURANCE OF LEARNING). An AOL report prepared for each course, basically documents the expected course learning outcomes (which are linked to program goals), assessment components and evaluation criteria in terms of rubrics to assess whether students meet all the learning goals in the course. The AOL report for SMIC maps each CLO associated with SMIC to a unique PLG and clearly specifies the evaluation components like weekly presentations and portfolio performance for assessing each CLO (shown in Table 2). The corresponding assessment rubrics for grading each CLO is shown in Table 3.

Table 4 shows the year-wise quantification of the learning outcomes and distribution of students who exceed/meet/did not meet the expectations in SMIC. Please see details in the appendix 2 sample SMIC grade file. TAPMI’s requirement of 90% of the students meeting expectations or exceeding expectations has been met in weekly presentations associated with all the three PLGs. With regards to CLO1, students were able to demonstrate—through presentation component (B)—the ability to construct optimal portfolios using traditional as well as more advanced techniques, compute various input parameters by forecasting expected risk and returns and arrive at appropriate entry, rebalancing and exit strategies. Performance on presentation component (A) associated with CLO 2, students were able to work out appropriate strategic, and tactical allocation had to be worked out based on their respective investment philosophy. Likewise, student’s performance on presentation component(C) associated with CLO 3 showed that students demonstrated the ability to justify the decisions under varying market conditions. However, the market outcomes measured by portfolio performance were beyond the control of students and showed below expectation performance in the range of 14% to 23% across different batches. To enhance the effectiveness of SMIC, students were recommended to discuss papers from practitioner’s journals—such as, *Journal of Portfolio Management* or *Financial Analyst Journal*—and update themselves with the latest thinking in the portfolio management area. Further, the final presentation component (C) was more oriented towards computing returns for the Indian equity market based on the Carhart four-factor model. Also, mentors from the Industry—such as fund managers from Mutual funds or Investment analyst—were assigned to a cohort of students undergoing SMIC from the beginning of the course to help them appreciate the market conditions better.

At the end of the course, the portfolio held by each team is liquidated. Portfolio performance component of CLO 3 is evaluated by external finance professional/industry expert in a formal event. The portfolio manager of the team presents report of his or her portfolio’s performance consistent with the stated investment philosophy and provides explanation for any deviation. Different teams also show their weekly and monthly portfolio performance against the chosen benchmark. The minutes of the meeting entered in the investment dairy are evaluated. Performance evaluation of the portfolio is conducted in a formal event by a group of industry

Table 2. Mode of assessment for SMIC	
CLO-PLG link	Mode of assessment
CLO 1. Compare performance of various sectors and come up with a dynamic asset allocation strategy for their portfolio. (PLG 3 Integrative Thinking)	Weekly Presentation— Component (A)
CLO 2. Construct optimal portfolios, generate research reports, compute various input parameters and determine entry, rebalancing and exit strategies. (PLG 1 Application of Fundamentals)	Weekly Presentation— Component (B)
CLO3. Choose and justify appropriate course of action for managing their portfolio in alignment with their stated Investment philosophy and generate alpha and returns for their portfolio within the given investment horizon. (PLG 4 Effective Communication)	Final Presentation— Component (C), Investment diary and Portfolio Performance

Table 3. Rubrics for assessment of course learning outcomes for SMIC

Course Learning Outcome (CLO)	Exceed Expectation	Meet Expectation	Does not meet Expectation
CLO 1. Compare performance of various Investment opportunities and come up with a dynamic Asset allocation strategy for their fund	Student is able to identify the universe of investment opportunities and arrive at strategic and tactical asset allocation strategies for investment. In addition, the student demonstrates methodological rigour equivalent to well-known fund houses in designing an appropriate strategy to filter out probable securities and perform fundamental analysis, consistent with the investment philosophy and in line with the defined risk appetite level.	Student is able to identify the universe of investment opportunities and arrive at strategic and tactical asset allocation strategies for investment.	Student is unable to list all possible investment opportunities and compare them to arrive at an appropriate allocation strategy.
CLO 2. Construct optimal portfolios, generate research reports, compute various input parameters and determine entry, rebalancing and exit strategies.	Student is able to construct optimal portfolio, arrive at entry and exit levels for all their stocks based on technical analysis and decide appropriate thresholds for portfolio rebalancing. In addition, the student demonstrates the ability to use analytical approaches to arrive at weights for individual stocks and coherently links the defined risk appetite with overall risk management strategy at portfolio level, sector level and individual stock level.	Student is able to construct optimal portfolio, arrive at entry and exit levels for all their stocks based on technical analysis and decide appropriate thresholds for portfolio rebalancing.	Student is neither able to construct optimal portfolio appropriately and/or nor able to decide appropriate rebalancing levels.
CLO3. Choose and justify an appropriate course of action for managing their portfolio in alignment with their stated Investment philosophy and generate alpha and returns for their portfolio within the given investment horizon.	Student is able to clearly and consistently defend various investment decisions to buy, sell or hold a security in line with the stated investment philosophy and defined risk appetite. In addition, student demonstrates the capability of taking additional risk than what was warranted by their predefined during times of rising and falling market conditions.	Student is able to clearly and consistently defend various investment decisions to buy, sell or hold a security in line with the stated investment philosophy and defined risk appetite.	Student is not able to clearly defend investment decisions to the stated Investment philosophy and defined risk appetite.
	Given the Investment philosophy and the risk appetite, the student is able to justify the generated alpha based on a Single Index model as well as the Carhart four factor model that adjusts for risk factors.	Given the Investment philosophy and the risk appetite, the student is able to justify the generated alpha based on a Single Index model.	Given the Investment philosophy and the risk appetite, the student is not able to justify the generated alpha based on single index model.

Table 4. Year-wise assurance of learning in SMIC

Batch	Total No. of students	Expectation	PLG Integrative Thinking		PLG Application of Fundamentals		PLG Effective Communication			
			CLO1		CLO2		CLO3			
			Presentation—Component (B)		Presentation—Component (A)		Presentation—Component (C)			
2013–2015	35	Below	0	0%	0	0%	0	0%	5	14%
		Meets	20	57%	30	86%	30	86%	20	57%
		Exceeds	15	43%	5	14%	5	14%	10	29%
2014–2016	31	Below	0	0%	0	0%	0	0%	5	16%
		Meets	18	58%	22	71%	27	87%	19	61%
		Exceeds	13	42%	9	29%	4	13%	7	23%
2015–2017	31	Below	0	0%	0	0%	0	0%	7	23%
		Meets	19	61%	25	81%	24	77%	22	71%
		Exceeds	12	39%	6	19%	7	23%	2	6%
2016–2018	42	Below	0	0%	0	0%	0	0%	6	14%
		Meets	22	52%	32	76%	37	88%	28	67%
		Exceeds	20	48%	10	24%	5	12%	8	19%

Source: AoL reports of SMIC of respective years

Table 5. Portfolio performance of selected SMIC teams

Team	Batch	Investment Corpus	Profit/Loss (in INR)	Profit/Loss (%)	Jensen's Alpha (CAPM)
Tradersdrift	2013–15	125,000	8,997.59	7.20	0.00033
The Silent Wolves	2013–15	125,000	4,133.72	3.30	0.048943
The Finatics	2013–15	125,000	8,579.2	6.86	0.24
Mast	2013–15	125,000	5,636	4.36	0.0093
Greenback Boogie	2013–15	125,000	4,062	3.24	-0.06
Royal Flush	2014–16	125,000	5,915.5	4.73	-0.15
Artharthi	2014–16	125,000	-1,623.2	-2.01	-8.67
Nivesh	2014–16	125,000	-4,412.5	-3.53	-2.15
The Wolves	2015–17	125,000	1990	1.59	-2.47
Obsidione	2015–17	125,000	2117.97	1.69	-51.86
Circuit Breakers	2015–17	125,000	8,291	6.63	-0.141
The House	2015–17	125,000	33,725	26.98	6.69
Phoenix	2016–18	125,000	-4,855.56	-3.55	-0.2028
Investophiles	2016–18	125,000	-9,565	-7.65	-0.0174

Note: Jensen's Alpha is a coefficient that is proportional to the excess return of a portfolio over its required return, or its expected return, for its expected risk as measured by its beta. Alpha is determined by the fundamental values of the companies in the portfolio in contrast to beta, which measures the portfolio's return due to its volatility. Jensen's alpha can be positive or negative. If the alpha is negative, then the portfolio is underperforming the market and vice-versa.

experts and professionals. The industry experts evaluate each team's investment decisions, give feedback and identify opportunities to improve the investment process, increase returns, or mitigate risks. All these evaluation components assess the "process competencies" of team members for arriving at investment decisions rather than the portfolio performance as outcomes. Portfolio performance of selected teams across various batches is presented in Table 5.

It can be observed that the portfolio performance of different teams across various batches has been mixed. Some teams have made profits, while others have made losses. Thus, SMIC is neither a game nor a simulation. Risks are taken in real time—the likelihood of making profits is as good as the probability of incurring losses. Students face real-time consequences of investment decisions they undertake in their roles akin to real life, high-profile positions such as equity/financial analysts and portfolio managers.

7. Concluding remarks

Given the growing discontent among various stakeholders on teaching methods and mode of delivery, academic innovation in management learning is imperative. Designing industry-relevant course and incorporating student-centric approaches in management education is a must. TAPMI's SMIC, with its experiential learning approach to state-of-the-art teaching investments and portfolio management, is a concrete step in the desired direction. It is aimed at increasing the employment opportunities of participating students in areas such as equity research, investment banking, commercial banking, and corporate finance. Familiarity with the workings of Bloomberg terminals as well as the communication and information technologies associated with trading are expected to help students to transfer the knowledge gained in the finance lab to a working environment.

A considerable amount of planning and coordination at the institutional level enabled the launch of SMIC. An exclusive learning space has been created in the TAPMI ecosystem with

sophisticated Finance Lab housing Bloomberg Terminals. The curriculum of SMIC, with its varied pedagogy tools and techniques facilitates experiential learning to occur. The scope and range of planned activities over 9 months of SMIC along with several outside classroom informal forums and events enable the proliferation of multiple experiences related to the theory and practice of investment finance. Investment diaries as well as weekly presentations followed by discussion with industry experts provide space for reflections and meaningful associations in the finance domain. Real-time exposure to investment activity in the Bombay stock exchange/National stock exchange ensures the transfer of learning. Students' performance on in-house weekly presentations is satisfactory; however, considerable variations can be observed in portfolio performance. Thus, SMIC has all the ingredients to facilitate reinforcement of conceptual and analytical skills as well as a deeper understanding of the vagaries of the capital market among students.

This paper has delineated the structure, design and implementation of SMIC as an experiential learning process. Such real-time investment courses, though quite common in international business schools, are an academic innovation in the Indian context. It is hoped that this experience-sharing document on making and running SMIC will be a useful guide to other business schools from India wishing to pursue similar experiential learning activities with their students. However, changing from traditional teaching methods in finance to experiential approach like SMIC requires considerable effort and resources. Given that SMIC is a resource-intensive innovation, it calls for long-term institutional commitment to create, manage, and sustain processes and systems that support such endeavour. Our future research will involve follow up with alumni of the institute who underwent SMIC, undertaking a qualitative study on how relevant was training and knowledge gained in the course in their current professional/personal investment. A feedback survey would also be taken to measure students' perceptions about the design, structure and implementation and where they would like to see improvement. Moreover, learning experience associated with SMIC as an experiential learning method for PGDM-BKFS students would be compared to other experiential learning methods such as simulations and traditional learning methods such as lecture and case method used for other regular finance students in the institute.

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Notes

1. ASSOCHAM is an acronym for The Associated Chambers of Commerce & Industry of India.
2. One credit indicates 10 h of contact for classroom instruction.
3. Samnidhy is the only student-managed fund registered with the Indian Partnership Act with the Registrar of Firm (Karnataka) and officially recognised by the regulators in India.
4. 1 US\$ = 70.95 as on 31 August 2018.

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Appendix 1

T A Pai Management Institute				
Course Learning Outcomes (CLOs)				
Program:	PGDM-BKFS			
Course#	2nd Year			
Course name	Student Management Investment Course (SMIC)			
Credits	4			
Course Description:	SMIC provides a unique opportunity to students to undergo this experiential learning of Stock selection and Portfolio Management through the Student Managed Investment Course which would be spread over Terms IV to VI.			
PLG Linkage		CLO1	CLO2	CLO3
Course Learning Outcome (CLO) linked to its corresponding Program Learning Goals (PLG) below. Each CLO may link to more than one PLG and vice versa.		Compare performance of various Investment opportunities and come up with a dynamic Asset allocation strategy for their fund.	Construct optimal portfolios, generate research reports, compute various input parameters and determine entry, rebalancing and exit strategies.	Choose an appropriate course of action for managing their portfolio in alignment with their stated investment philosophy and generate alpha and returns for their portfolio with-in the given investment horizon.
	Upon completion of the PGDM program the student demonstrates the following traits:			

(Continued)

(Continued)					
PLG1	Application of Fundamentals			X	X
	Traits: Demonstrate application of functional / conceptual knowledge to business situations		X		
PLG2	Problem Identification and Solution				
	Traits: Demonstrate ability to identify a problem, critically assess various alternatives and suggest appropriate solution.	X	X		X
PLG3	Integrative Thinking				
	Traits: Demonstrate ability to identify inter-linkages among functional areas within an enterprise and assess the impact of external environment on its performance	X	X		X
PLG4	Effective Communication				
	Traits: Demonstrate proficiency in Oral and Written Communication				X
PLG5	Ethical Responsibility				
	Traits: Demonstrate awareness and assess impact of ethical behaviour on business				X
PLG6	Leadership				
	Traits: Demonstrate capability to take leadership role in a business situation				X

Appendix 2

Sl. No.	Roll No.	Name	Research Reports/ Present. (50)	Wght 40%	Comprahensive Investment (30)	Wght 30%	Portfolio Performance(30)	Wght 30%	Total 100%	Grade
1	XXX101	MR.	31.0	24.8	20.0	20.0	0.0	0.0	45	B+
2	XXX102	MR.	27.0	21.6	22.0	22.0	0.0	0.0	44	B
3	XXX103	MR.	34.0	27.2	20.0	20.0	0.0	0.0	47	A-
4	XXX104	MR.	27.0	21.6	22.0	22.0	0.0	0.0	44	B
5	XXX105	MS.	34.0	27.2	20.0	20.0	0.0	0.0	47	A-
6	XXX106	MR.	34.0	27.2	20.0	20.0	0.0	0.0	47	A-
7	XXX107	MR.	31.0	24.8	20.0	20.0	0.0	0.0	45	B+
8	XXX108	MR.	31.0	24.8	24.0	24.0	15.0	15.0	64	A+
9	XXX109	MR.	31.0	24.8	20.0	20.0	0.0	0.0	45	B+
10	XXX110	MS.	31.0	24.8	24.0	24.0	15.0	15.0	64	A+
11	XXX112	MR.	31.0	24.8	20.0	20.0	0.0	0.0	45	B+
12	XXX113	MS.	31.0	24.8	24.0	24.0	15.0	15.0	64	A+
13	XXX114	MR.	27.0	21.6	22.0	22.0	0.0	0.0	44	B
14	XXX115	MR.	27.0	21.6	22.0	22.0	0.0	0.0	44	B
15	XXX116	MR.	31.0	24.8	20.0	20.0	0.0	0.0	45	B+
16	XXX117	MR.	34.0	27.2	20.0	20.0	0.0	0.0	47	A-
17	XXX118	MR.	27.0	21.6	22.0	22.0	0.0	0.0	44	B
18	XXX119	MS.	34.0	27.2	20.0	20.0	0.0	0.0	47	A-
19	XXX120	MR.	31.0	24.8	24.0	24.0	15.0	15.0	64	A+
20	XXX121	MR.	31.0	24.8	24.0	24.0	15.0	15.0	64	A+
21	XXX122	MR.	231.0	24.8	20.0	20.0	0.0	20.0	45	2B+

34.00	27.20	24.00	24.00	24.00	15.00	15.00	64
27.00	21.60	20.00	20.00	20.00	0.00	0.00	44
30.76	24.61	21.43	21.43	21.43	3.57	3.57	50
2.49	1.99	1.69	1.69	1.69	6.55	6.55	8.23

RANGE		FREQUENCY	GRADE %
≥64	A+	5	47.62
50-63	A	0	
47-49	A-	5	
45-46	B+	6	52.38
≤44	B	5	
TOTAL		21	100



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